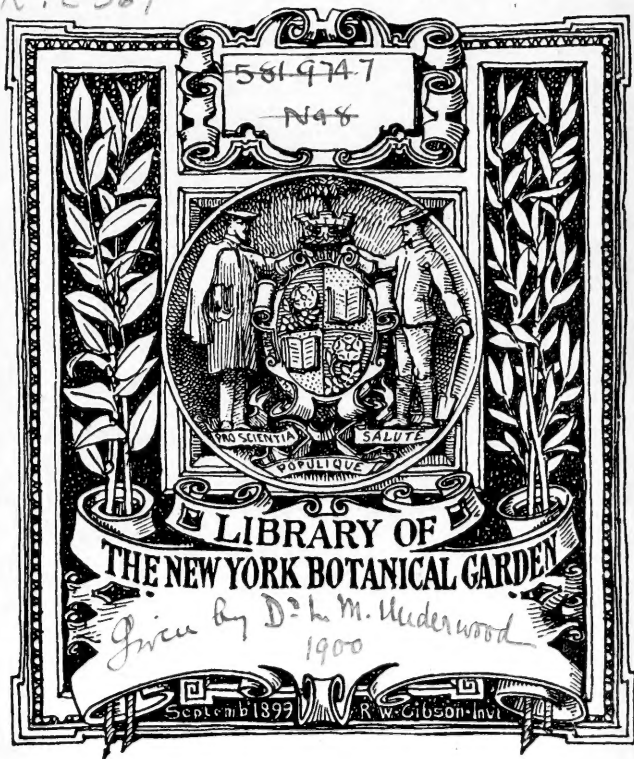
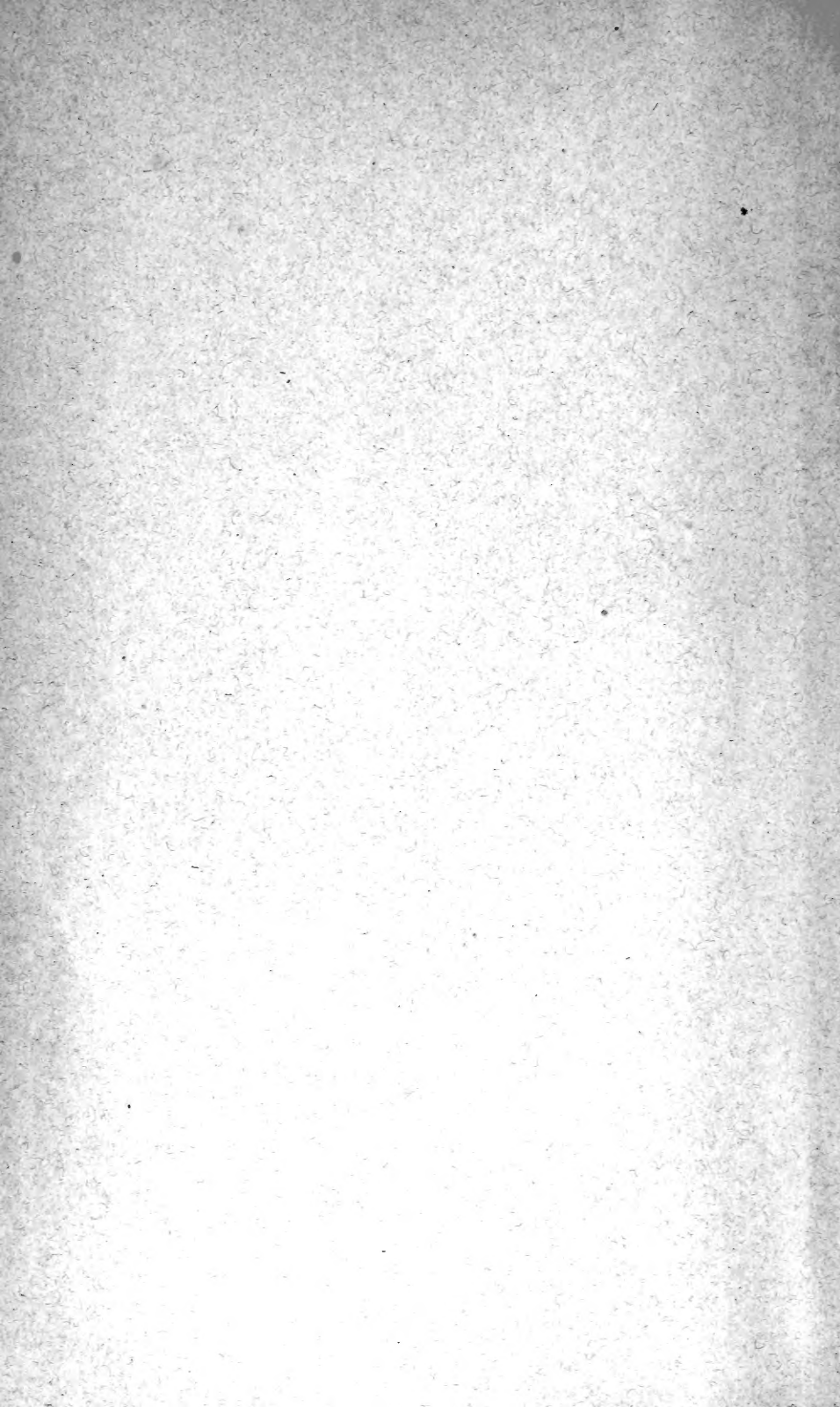


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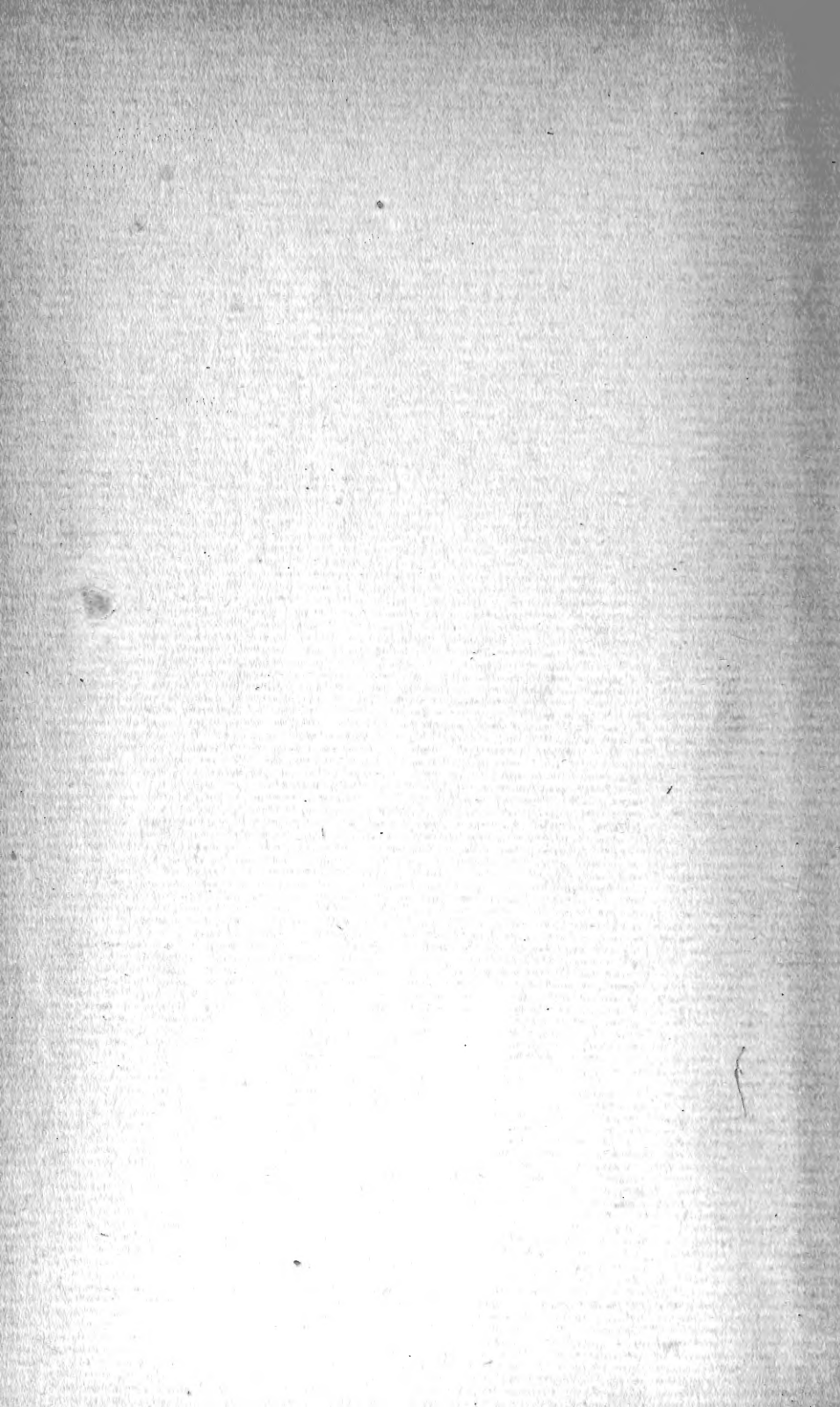
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FORTY-FIRST ANNUAL REPORT

OF THE

TRUSTEES

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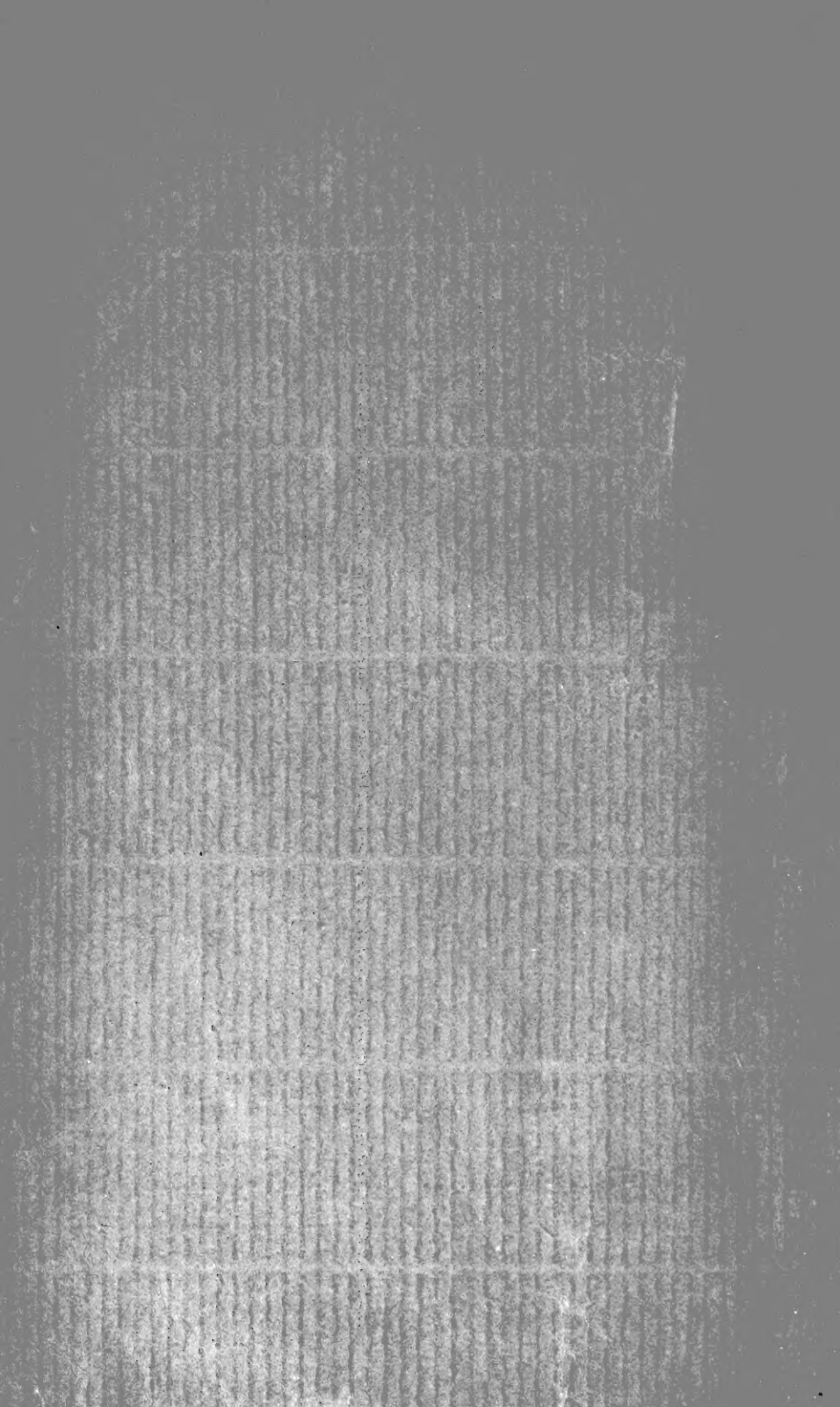
State Museum of Natural History

Annual Report of the State Botanists

FOR THE YEAR 1887.

TRANSMITTED TO THE LEGISLATURE MAY 7, 1888.

THE TROY PRESS COMPANY, PRINTERS.
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STATE OF NEW YORK.

No. 19.

IN SENATE,

MAY 7, 1888.

FORTY-FIRST ANNUAL REPORT

OF THE

TRUSTEES OF THE STATE MUSEUM OF NATURAL HISTORY.

To the Legislature of the State of New York:

I have the honor to transmit herewith the Forty-first Annual Report of the Regents of the University as Trustees of the New York State Museum of Natural History, as required by law.

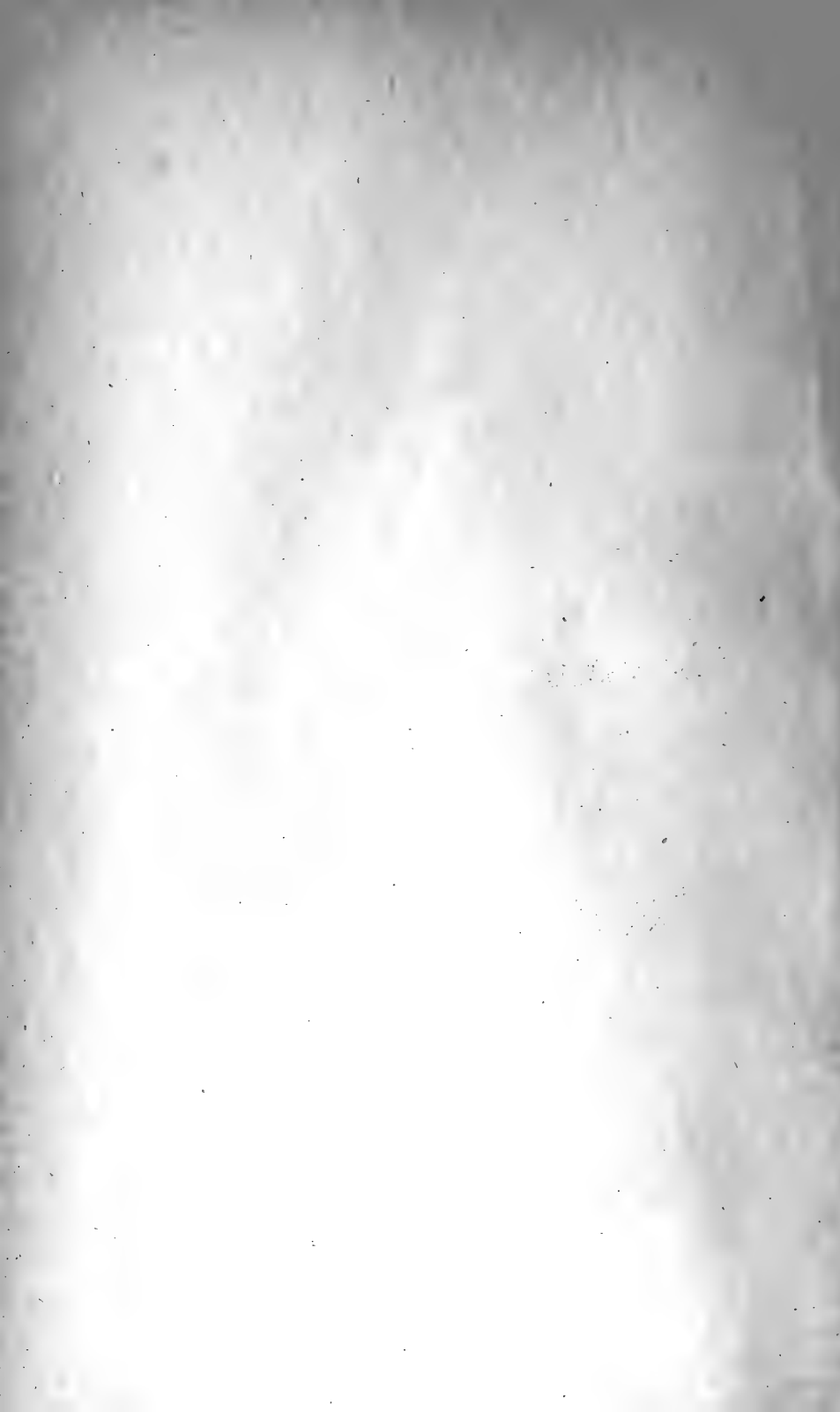
H. R. PIERSON,

Chancellor.

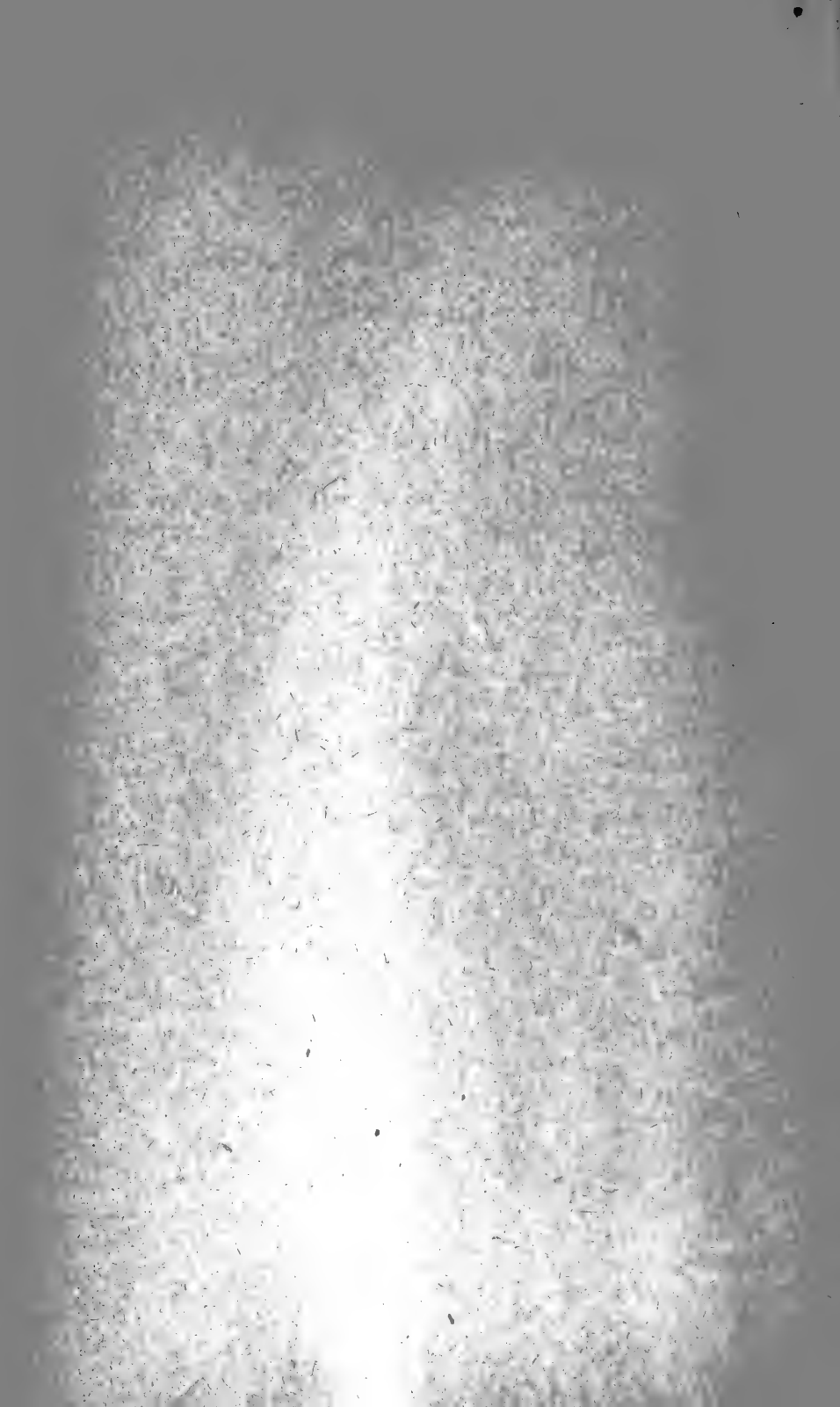
OFFICE OF THE REGENTS, May 7, 1888.

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REPORT OF THE BOTANIST.



REPORT OF THE BOTANIST.

To the Honorable the Board of Regents of the University of the State of New York:

GENTLEMEN.—I have the honor to communicate to you the following report:

In the prosecution of the work of completing and arranging the State Herbarium the past year, specimens of the plants of the State have been collected in the counties of Albany, Greene, Lewis, Oneida, Oswego, Rensselaer, Saratoga and Ulster. Specimens have also been contributed which were collected in the counties of Broome, Cayuga, Kings, Orleans, Rensselaer and Wayne. Specimens of one hundred and seventy species of plants have been added to the herbarium, of which twenty-seven were contributed by correspondents and one hundred and forty-three were collected by the botanist. Of those collected by the botanist, one hundred and five species are new to the herbarium and to the State flora. Among the added species are twenty-six flowering plants, some of which are introduced and possibly may not be sufficiently abundant and well-established to be properly considered a part of our flora, but all were found growing without cultivation and it was thought best to place the fact on record. A list of the added species is appended and is marked A.

The number of correspondents who have contributed specimens is seventeen. The contributed specimens of extralimital species are not included in the foregoing enumeration. A list of the names of the contributors, and of their respective contributions, is marked B.

In the eastern part of the State, the months of July, August and September were unusually favorable to the production of fleshy fungi, the Hymenomycetes, and special attention was given to the collection of these plants. They constitute a large percentage of the added species and among them are many that are considered new to science. In consequence of their evanescent colors, painted

sketches were made of most of the new species while the plants were yet fresh. A record of the added species, together with descriptions of the new ones, is marked C.

Remarks concerning species previously known to belong to our flora and descriptions of new varieties are recorded in a chapter marked D.

The botanical reports have now become so numerous that an index to them is greatly needed, in order to facilitate reference to them and save time in consulting them. I have, therefore, prepared an index of the genera and species recorded in reports twenty-two to thirty-eight, inclusive. It is alphabetically arranged and is marked F.

Beaver dam is a body of water near to and connected with Beaver lake, in the eastern part of Lewis county. It was reported to me that the red-flowered variety of the white water lily, *Nymphaea odorata*, had been seen growing there. Wishing to obtain specimens of this interesting form, the locality was visited, but only the same form that was found last year in Mud pond was detected here. The external petals are tinged with red but the inner ones are white. The full red-flowered variety is yet a desideratum. There was found, however, in Beaver lake inlet, locally called "The Slough," a scarcely less interesting form of this plant. It has the very large flowers and leaves of the tuberous water lily, *Nymphaea tuberosa*, and yet the very distinct and pleasant fragrance of the white water lily. It is interesting, scientifically, because it tends to support the views of those botanists who consider these plants as mere forms of one species.

A form of the northern or Canadian blueberry, *Vaccinium Canadense*, in which the fruit is jet black and shining, was observed growing plentifully in the cleared land and pastures near Beaver lake. Thus, it happens that each one of our four common blueberries, which contribute to supply our markets with this excellent fruit, has its black-fruited variety, notwithstanding the general application of the name "blueberries." This variation is interesting and worthy of notice, because it indicates a tendency in these plants to vary in a part in which variation may be made the basis of useful improvement under proper treatment and culture. The fruit is the useful part of these plants and variation in it indicates capability of improvement in this direction. A similar variation has also been observed in the fruit of the black huckle-

berry, *Gaylussacia resinosa*. In it the fruit is commonly dull black without any bloom, but in the variety it is of a shining jet black and is readily distinguishable from the ordinary form. Dishonest berry pickers sometimes take advantage of the similarity in size and shape between this huckleberry and the black-fruited variety of the chokeberry, *Pyrus arbutifolia*. They mix the two fruits and the fraud is not likely to be detected till the taste reveals it. The flavor of large quantities of canned berries is sometimes spoiled by this reprehensible practice.

Mr. P. H. Dudley, civil engineer of the N. Y. C. and H. R. railroad, has, at my request, communicated to me some of the results of his investigations of the fungi destructive to wood. This is of such great practical importance that I have added a copy of his communication to this report. It is marked E.

Very respectfully submitted.

CHAS. H. PECK.

ALBANY, December 6, 1887.

(A.)

PLANTS ADDED TO THE HERBARIUM.

*New to the Herbarium.**Ranunculus septentrionalis Poir.**Brassica campestris L.**Lunaria biennis L.**Dianthus barbatus L.**Levisticum officinale Koch.**Valerianella olitoria Poll.**Aster juncus Ait.**Phlox maculata L.**Myosotis arvensis Hoffm.**M. collina Hoffm.**Cuscuta tenuiflora Engelm.**Physalis lanceolata Mx.**Nepeta grandiflora Bieb.**Plantago Media L.**Aristolochia Clematidis L.**Euphorbia Esula L.**Salix amygdaloides Ander.**Potamogeton Spirillus Tuckm.**P. Zizii M. & K.**P. Hillii Morong.**P. marina L.**Eleocharis diandra Wright.**Panicum nervosum Muhl.**Deyeuxia Porteri Vasey.**Eatonia Dudleyi Vasey.**Bromus arvensis L.**Lepiota granosa Morg.**L. arenicola Pk.**Tricholoma resplendens Fr.**T. Columbeta Fr.**T. intermedium Pk.**T. terriferum Pk.**T. tricolor Pk.**T. fuligineum Pk.**T. putidum Fr.**Clitocybe sub similis Pk.**C. caespitosa Pk.**C. sulphurea Pk.**C. tortilis Bolt.**Collybia scorzonerea Batsch.**C. hariolorum D. C.**C. strictipes Pk.**C. alba Pk.**Omphalia subgrisea Pk.**Mycena capillaripes Pk.**M. crystallina Pk.**Entoloma sericeum Bull.**E. flavoviride Pk.**Clitopilus erythropsorus Pk.**C. conissans Pk.**C. caespitosus Pk.**Pholiota minima Pk.**Inocybe fibrillosa Pk.**I. subfulva Pk.**I. violaceifolia Pk.**I. asterospora Quel.**I. margarisporea Berk.**I. commixta Bres.**Inocybe agglutinata Pk.**I. nigridisca Pk.**I. vatricosa Fr.**Hebeloma crustuliniforme Bull.**H. longicaudum Pers.**Flammula lubrica Fr.**F. subfulva Pk.**Naucoria paludosa Pk.**N. unicolor Pk.**N. triscopoda Fr.**N. carpophila Fr.**Galera inculta Pk.**Agaricus comptulus Fr.**Stropharia albocyanea Desm.**Psilocybe clivensis B. & Br.**P. senex Pk.**Deconica subviscida Pk.**Psathyrella minima Pk.**Cortinarius balteatus Fr.**C. pluvius Fr.**C. muscigenus Pk.**C. brevipes Pk.**C. brevissimus Pk.**C. albidifolius Pk.**C. spilomeus Fr.**C. flavifolius Pk.**C. griseus Pk.**C. badius Pk.**C. subflexipes Pk.**C. paleaceus Fr.**C. rigidus Fr.**Hygrophorus Laurei Morg.**Lactarius aspidius Fr.**L. maculatus Pk.**Russula lepida Fr.**R. adulterina Fr.**R. atropurpurea Pk.**Boletus speciosus Frost.**B. auriflammeus B. & C.**B. purpureus Fr.**B. hemichrysus, B. & C.**B. glabellus Pk.**B. varipes Pk.**B. indecicus Pk.**B. albellus Pk.**Polyporus flavovirens B. & R.**P. rimosus Berk.**P. mutans Pk.**P. pinus Pk.**Merulius Ravenelii Berk.**M. himantoides Fr.**Hydnum fasciatum Pk.**Irpex nodulosus Pk.**Radulum pendulum Fr.**Corticium olivaceum Fr.**Clavaria albida Pk.**C. densa Pk.**Geaster Schaefferi Vitt.*

Geaster vittatus *Kalchb.*
Sphæropsis carpineae *S. & Br.*
Cercospora Gentiana *Pk.*

Oöspora Cucumeris *Pk.*
Sporendonema myophilum *Sacc.*
Zygodesmus violaceofuscus *Sacc.*

Not new to the Herbarium.

Nelumbium luteum *Willd.*
Nymphæa odorata *Ait.*
Stellaria longifolia *Muhl.*
Vicia sativa *L.*
Fragaria Virginiana *Duchesne.*
Rubus villosus *Ait.*
Galium circæzans *Mx.*
G. trifidum *L.*
Aster diffusus *Ait.*
A. Tradescanti *L.*
Erigeron annuus *Pers.*
Solidago rugosa *Mill.*
Gaylussacia resinosa *T. & G.*
Fraxinus viridis *Mx.*
Asclepias tuberosa *L.*
Symphytum officinale *L.*
Myosotis palustris *With.*
Epiphegus Virginiana *Bart.*
Juncus acuminatus *Mx.*
J. marginatus *Rost.*
J. Canadensis *Gay.*
J. tenuis *Willd.*
Cyperus filiculmis *Vahl.*

Scirpus polyphyllus *Vahl.*
S. Torreyi *Olney.*
Eragrostis capillaris *L.*
Panicum clandestinum *L.*
Botrychium lanceolatum *Angst.*
Amanita phalloides *Fr.*
A. rubescens *Fr.*
Lepiota granulosa *Batsch.*
L. illinita *Fr.*
Tricholoma Peckii *Howe.*
T. vaccinum *Pers.*
T. fumosoluteum *Pk.*
Clitocybe nebularis *Batsch.*
C. laccata *Scop.*
Collybia lentinoides *Pk.*
Clitopilus prunulus *Scop.*
Inocybe rimosa *Bull.*
Marasmius præacutus *Ellis.*
M. salignus *Pk.*
Hygrophorus pratensis *Fr.*
Clavaria stricta *Pers.*
C. crispula *Fr.*
C. pistillaris *L.*

(B.)

CONTRIBUTORS AND THEIR CONTRIBUTIONS.

Prof. W. R. Dudley, Ithaca, N. Y.

Lunaria biennis *L.*
Fragaria Virginiana *Duch.*
Aster junceus *Ait.*
A. diffusus *Ait.*
A. Tradescanti *L.*
Fraxinus viridis *Mx.*
Myosotis arvensis *Hoffm.*
M. collina *Hoffm.*
Cuscuta tenuiflora *Engl.*
C. epilinum *Weike.*
Plantago Media *L.*

Aristolochia Clematidis *L.*
Euphorbia Esula *L.*
Salix amygdaloides *And.*
Juncus Canadensis *Gay.*
Potamogeton Zizii *M. & K.*
P. Spirillus *Tuckm.*
P. Hillii *Mor.*
P. marina *L.*
Panicum nervosum *Muhl.*
Deyeuxia Porteri *Vasey.*
Eatonia Dudleyi *Vasey.*

Prof. B. D. Halsted, Ames, Iowa.

Sphærotheca lanestris *Hark.*
Cercospora rosæcola *Pass.*
Peronospora Claytoniæ *Farl.*
Puccinia prunispinosæ *Pers.*

Uromyces Lupini *B. & C.*
U. Betæ *Kuhn.*
Æcidium Phaceleæ *Peck.*

Prof. W. G. Farlow, Cambridge, Mass.

Puccinia Malvacearum *Mont.*
Ustilago antherarum *Fr.*
Monilia Linhartiana *Sacc.*
Phragmotrichum Chailletii *K. & S.*
Exoascus Wiesneri *Rathay.*

Geoglossum atropurpureum *Pers.*
Microsphaeria Vaccinii *C. & P.*
Leptosphaeria Silenes-acaulis *DeNot.*
Dothidea Wittrockii *Eriks.*

Prof. H. A. Green, Troy, N. Y.

Umbilicaria Muhlenbergii *Tuckm.*

C. E. Fairman, M. D., Lyndonville, N. Y.

| | | |
|-------------------------------------|--|----------------------------------|
| Polyporus sulphureus <i>Fr.</i> | | Nidularia pulvinata <i>Schw.</i> |
| Perichæna corticalis <i>Batsch.</i> | | |

E. C. Howe, M. D., Lansingburgh, N. Y.

| | | |
|-----------------------------------|--|--------------------------------------|
| Eleocharis diandra <i>Wright.</i> | | Agropyrum caninum <i>R. & S.</i> |
| Bromus arvensis <i>L.</i> | | |

H. C. Gordinier, M. D., Troy, N. Y.

| | | |
|---------------------------|--|-----------------------------------|
| Bromus arvensis <i>L.</i> | | Aristolochia Clematitis <i>L.</i> |
|---------------------------|--|-----------------------------------|

Harold Wingate, Philadelphia, Penn.

Orthotricha microcephala *Wing.*

P. H. Dudley, New York.

| | | |
|-----------------------------|--|---|
| Lenzites striata <i>Sw.</i> | | Lentinus Nicaraguensis <i>B. & C.</i> |
| <i>L. abietina Fr.</i> | | Trametes Pini <i>Fr.</i> |

W. C. Stevenson, Jr., Philadelphia, Penn.

Lepiota Americana *Peck.*

J. A. Lintner, Albany, N. Y.

Reticularia Lycoperdon *Bull.*

George T. Fish, Rochester, N. Y.

Nulumbium luteum *Willd.*

H. L. Griffis, Binghamton, N. Y.

Sporendonema myophilum *Sacc.*

A. P. Morgan, Preston, Ohio.

| | | |
|------------------------------|--|--------------------------------|
| Hydnum casearum <i>Morg.</i> | | Hydnum alboviride <i>Morg.</i> |
|------------------------------|--|--------------------------------|

C. J. Curtis, Lincolnton, N. C.

| | | |
|---------------------------------|--|-----------------------------------|
| Fistulina hepatica <i>Fr.</i> | | Lactarius atroviridis <i>Pk.</i> |
| Hypomyces hyalinus <i>Schw.</i> | | Boletus leprosus <i>Pk.</i> |
| Boletus flexuosipes <i>Pk.</i> | | Boletus dictyocephalus <i>Pk.</i> |

Rev. J. L. Zabriskie, Flatbush, N. Y.

Polyporus rimosus *Berk.*

S. H. Wright, M. D.

| | | |
|---------------------------------|--|----------------------------------|
| Polyporus Curtisii <i>Berk.</i> | | Clathrus columnatus <i>Bosc.</i> |
| <i>P. sanguineus Fr.</i> | | |

(C.)

PLANTS NOT BEFORE REPORTED.

Ranunculus septentrionalis, Poir.

In wet places, rarely in pine woods. Albany and Rensselaer counties. Common. June. I have not seen, in the vicinity of Albany, the true *R. repens*, with which this species has been confused.

Brassica campestris, L.

About houses and in cultivated grounds. Menands, Albany county. June. The specimens belong to variety *colza*, which has probably been introduced in "bird seed."

Lunaria biennis, L.

Escaped from cultivation at Ithaca. May. Prof. W. R. Dudley.

Dianthus barbatus, L.

Established in woods near Ithaca. June and July. Dudley.

Levisticum officinale, Koch.

Occasionally established by roadsides and in waste places. Cayuga county. Dudley. Sandlake, Rensselaer county. June.

Valerianella olitoria, Poll.

Frontenac island, Cayuga lake. May. Dudley. Introduced and synonymous with *Fedia olitoria* Vahl.

Aster junceus, Ait.

Sphagnous swamps. Round marsh, Dryden. September. Dudley.

Phlox maculata, L.

Roadsides. Sandlake. June. Probably introduced in this locality, or escaped from cultivation, but the plants were growing remote from any dwelling.

Myosotis arvensis, Hoffm.

Ithaca. May and June. Dudley.

Myosotis collina, Hoffm.

Ithaca. May. Dudley.

Cuscuta tenuiflora, Engelm.

Near Union Springs. Growing on peppermint, *Mentha piperita*. August and September. Dudley.

Physalis lanceolata, Mx.

Cultivated grounds. Menands. Our plant is well described in the Manual under the name *Physalis Pennsylvanica*. It has probably been introduced from the south or west, but is very persistent.

Nepeta grandiflora, Bieb.

Roadsides. Menands. September. Introduced.

Plantago Media, L.

University grounds, Ithaca. June. Dudley.

Aristolochia Clematitis, L.

Lansingburgh, Rensselaer county. *H. C. Gordinier.* Union Springs.
June. - *Dudley.* Introduced.

Euphorbia Esula, L.

Groton. June and July. *Dudley.*

Salix amygdaloides, Ander.

Fall creek, Eddy pond, Cayuga lake, Cayuga marshes, etc. Abundant. May. *Dudley.*

Potamogeton Spirillus, Tuckm.

Cayuta lake. August. *Dudley.* Lower Saranac lake, Essex county. Sandlake.

Two forms occur. In one the submersed leaves are rather long and straight; in the other they are shorter and somewhat recurved, and give the plant a peculiar appearance. The Cayuta-lake specimens are very small, being but one or two in. long.

Potamogeton Zizii, M. & K.

Fall creek. August and September. *Dudley.* Normanskill creek near Kenwood, Albany county.

Potamogeton Hillii, Morong.

Malloryville. July. *Dudley.*

Potamogeton marina, L.

Near the outlet of Seneca lake. July. *Dudley.*

Eleocharis diandra, Wright.

Lansingburgh. *E. C. Howe.*

Panicum nervosum, Muhl.

Woods near White church. July. *Dudley.* Cold Spring, Putnam county, and Adirondack mountains.

Deyeuxia Porteri, Vasey.

Thatcher's pinnacle, West Danby. August. *Dudley.* This is *Calamagrostis Porteri* of the Manual. It is a rare and local species.

Eatonia Dudleyi, Vasey.

South hill. June. *Dudley.* The specimens placed in the State Herbarium by Dr. Torrey, and labeled *Koeleria Pennsylvanica*, belong to this species, which has until recently been confused with *Eatonia*

Pennsylvanica. The characters by which it is separated from *E. Pennsylvanica* are, according to the author of the species, "its slender culms and panicle, the very short cauline leaves, the longer and wider lower glume, the more obtuse upper one and the shorter obtuser flowering glumes." The flowers have a peculiarly blunt appearance by which the plant may be easily recognized.

***Bromus arvensis*, L.**

Troy. *Gordinier* and *Howe*. Sparingly introduced. June.

***Lepiota granosa*, Morg.**

Prostrate trunks of trees, old stumps and decayed wood. Catskill mountains. September.

Our specimens do not agree rigidly with the description of the species to which we have referred them. The pileus is either obtuse or umbonate, even or radiately rugose-wrinkled, and is generally even and regular on the margin. The stem also is either equal or slightly thickened at the base, but these variations are not of specific importance. The flesh of the stem is yellowish as in *Lepiota amianthinus* to which this species is closely related, both in color and structure, but from which it may be distinguished by its habitat, its larger size and its entire membranous persistent annulus.

***Lepiota arenicola*, n. sp.**

Pileus at first broadly conical, then convex or nearly plane, obscurely punctate with minute granular squamules, whitish or cinereous, substriate and crenulate on the margin; lamellæ broad, subventricose, distant, free, white; stem slender, equal, stuffed, glabrous, whitish, the annulus imperfect, obsolete or quickly evanescent; spores oblong or subfusiform, acute at one end, .0005 to .0006 in. long, .0002 to .00024 broad.

Pileus 3 to 6 lines broad; stem 8 to 12 lines long, about 5 lines thick. Sandy soil. Karner, Albany county. August.

The spores indicate an affinity of this species with *L. metulispora*, of which it might be regarded as a dwarf variety, but it differs in its smaller size, more expanded pileus, distant lamellæ and glabrous stem. The mycelium binds the sand into a globose mass at the base of the stem.

***Tricholoma resplendens*, Fr.**

Thin woods. Catskill mountains. September.

***Tricholoma Columbetta*, Fr.**

Woods. Selkirk, Albany county. August.

Tricholoma intermedium, n. sp.

Pileus thin, campanulate, obtuse, glabrous, slightly viscid when moist, greenish-yellow, flesh white; lamellæ crowded, free or slightly adnexed, white; stem equal, firm, glabrous, white; spores broadly elliptical, .0002 in. long, .00016 broad.

Pileus 2 to 3 in. broad; stem 1 to 2 in. long, 3 to 5 lines thick.

Thin woods. Catskill mountains. September.

This species resembles some forms of *T. equestre*, from which it is separated by its white lamellæ. It appears to be intermediate between that species and *T. sejunctum* from which its glabrous pileus and crowded lamellæ distinguish it.

Tricholoma terriferum, n. sp.

Pileus broadly convex or nearly plane, irregular, often wavy on the margin, glabrous, viscid, pale alutaceous, generally soiled with adhering particles of earth carried up in its growth, flesh white, with no decided odor; lamellæ thin crowded, slightly adnexed, white, not spotted or changeable; stem equal, short, solid, white, floccose-squamulose at the apex; spores minute, subglobose, .00012 in. long.

Pileus 3 to 4 in. broad; stem 1 to 1.5 in. long, 6 to 8 lines thick.

Woods. Catskill mountains. September.

This and the next preceding species belong to the section *Limacina*.

Tricholoma tricolor, n. sp.

Pileus broadly convex or nearly plane, sometimes slightly depressed in the center, firm, dry, obscurely striate on the margin, pale alutaceous, inclining to russet, flesh whitish; lamellæ thin, narrow, close, adnexed, pale yellow, becoming brown or purplish-brown in drying; stem stout, short, firm, tapering upwards from the thickened or subbulbous base, white; spores broadly elliptical or subglobose, .0003 in. long.

Pileus 2 to 4 in. broad; stem 2 to 3 in. long, 6 to 12 lines thick.

Woods. Selkirk. August.

Remarkable for its varied colors and for the peculiar hue assumed by the lamellæ in the dried state.

Tricholoma fuligineum, n. sp.

Pileus convex or nearly plane, obtuse, often irregular, dry, minutely squamulose, sooty-brown, flesh grayish, odor and taste farinaceous; lamellæ subdistant, uneven on the edge, cinereous, becoming blackish in drying; stem short, solid, equal, glabrous, cinereous; spores oblong, elliptical, .0003 in. long, .00016 broad.

Pileus 1 to 2.5 in. broad; stem 1 to 1.5 in. long, 3 to 5 lines thick. Among mosses in open places. Catskill mountains. September. This and the next preceding species belong to the section *Genuina*.

***Tricholoma putidum*, Fr.**

Under pine trees. Catskill mountains. September.

Our specimens agree accurately with the description of *T. putidum*, except that the pileus is not umbonate; but this character is limited by Fries in *Icones Selectæ* to young plants.

***Clitocybe subsimilis*, n. sp.**

Pileus at first conical or subturbinata, then plane, nearly obconical, soft, fleshy, pure white, the margin at first involute and somewhat tomentose, then even or marked with irregular ridges, as if from matted tomentum, flesh white, taste mild; lamellæ in the young plant adnate, in the adult, decurrent, subdistant, often branched, white, the interspaces venose; stem equal or merely subbulbous, by no means obclavate, solid, soft, elastic, white; spores broadly elliptical or subglobose; .0002 to .00025 in. long, .00016 to .0002 broad.

Pileus 1 to 1.5 in. broad; stem 1 to 2 in. long, 2 to 4 lines thick.

Under pine trees. Catskill mountains. September.

This species is closely related to *Clitocybe clavipes*, of which there is said to be a white variety. I have separated our plant not only because of its pure white color, but also because of its peculiar stem, which is not at all obclavate as in *C. clavipes*, though sometimes it is slightly and abruptly bulbous. Its resemblance to *C. clavipes* has suggested the specific name. It is very unlike *C. obtexta* in its dry pileus and subdistant lamellæ.

Variety *monstrosa*. Lamellæ reticulately branched or anastomosing, causing the hymenium to appear porous either wholly or in part.

With the typical form.

***Clitocybe cæspitosa*, n. sp.**

Pileus thin, infundibuliform, often irregular, slightly silky, hygrophanous, grayish brown when moist, subcinereous or argillaceous when dry; lamellæ narrow, close, decurrent, somewhat branched, white; stem equal, stuffed or hollow, silky, white; spores minute, subelliptical, .00012 to .00016 in. long.

Pileus 1 to 1.5 in. broad; stem about 1 in. long, 2 to 3 lines thick.

Thin woods. Catskill mountains. September.

The plant is remarkable for its cæspitose mode of growth and its irregular, deformed appearance. The pileus is somewhat perforated. The relationship is with *C. expallens*, *C. Adirondackensis*, etc.

Clitocybe sulphurea, n. sp.

Pileus convex, slightly umbonate, moist or subhygrophanous, pale yellow, streaked, flesh yellowish; lamellæ subdistant, adnate, uneven or serrulate on the edge, pale yellow; stem equal or tapering upwards, curved or flexuous, hollow, colored and streaked like the pileus, yellowish within; spores broadly, elliptical or subglobose, .00025 to .0003 in. long, .0002 to .00025 broad.

Pileus 1 to 2 in. broad; stem 1 to 3 in. long, 2 to 4 lines thick.

Decaying wood of spruce and balsam. Wittenberg mountain. September.

Distinct from *Tricholoma sulphureum*, which it resembles in color, by its moist pileus, adnate lamellæ, hollow stem and lack of odor.

Clitocybe tortilis, Bolt.

Hard ground in an old road. Sandlake. August. A species closely allied to *C. laccata* and appearing like an irregular dwarf form of that species. Sometimes cæspitose.

Collybia scorzonerea, Batsch.

Woods. Adirondack and Catskill mountains. July and September. The species is distinguished from *C. maculatus* by the yellowish hue of the pileus and lamellæ. The stem is sometimes attenuated and radicating at the base and sometimes blunt.

Collybia hariolorum, D. C.

Woods. Catskill mountains. September.

Collybia strictipes, n. sp.

Pileus thin, broadly convex or nearly plane, glabrous, slightly rugose on the disc, moist or subhygrophanous, pale yellow, more highly colored on the disk, paler when dry; lamellæ thin, crowded, adnexed or subfree, white; stem equal, straight, hollow, glabrous, slightly mealy or pruinose at the top, white, with a dense white tomentum at the base; spores ovate, pointed or acuminate at one end, .00025 to .0003 in. long, .00016 broad.

Pileus 1.5 to 2 in. broad; stem 1.5 to 2.5 in. long, 2 to 3 lines thick.

Woods. Catskill mountains. September.

Collybia alba, n. sp.

Pileus thin, convex or hemispherical, even, obtuse, glabrous, white; lamellæ broad, subdistant, ventricose, adnexed or nearly free, white; stem short, equal or slightly thickened at the top, solid, glabrous,

white; broadly elliptical or subglobose, .00016 to .0002 in. long, .00012 to .00016 broad.

Pileus 3 to 5 lines broad, stem about 1 in. long, .5 to 1 line thick.

Mossy decayed wood and stumps. Gansevoort. July.

A small white species related to *C. Micheliana*, *C. muscigena* and *C. ludia*, but differing from these by its broad ventricose lamellæ.

***Omphalia subgrisea*, n. sp.**

Pileus membranaceous, convex or nearly plane, glabrous, striatulate, grayish-brown with a paler margin; lamellæ distant, arcuate-decurrent, cinereous; stem slender, short, stuffed, generally curved, sprinkled with minute mealy particles, colored like the pileus.

Pileus 2 to 3 lines broad; stem 6 to 10 lines long.

Decayed wood of birch, *Betula lutea*. Blue Mountain lake, Adirondack mountains. July.

In color this plant resembles *Mycena vulgaris*, or grayish forms of *M. clavicularis*; in size, *M. corticola*. When very young the stem is conical and the pileus is more narrow than its base.

***Mycena capillaripes*, n. sp.**

Pileus membranous, campanulate, glabrous, hygrophanous, livid gray or brownish and striate when moist, paler when dry, odor weak, alkaline; lamellæ ascending, subdistant, adnate, whitish or livid-white, the edge obscurely brownish-purple; stem slender, almost capillary, fragile, glabrous, hollow, colored like the pileus; spores narrowly elliptical, .0003 in. long, .00016 broad.

Pileus 3 to 5 lines broad; stem 1.5 to 2.5 in. long, scarcely .5 line thick.

Under pine trees. Karner. August.

This species is related to *Mycena rubromarginata* from which I have separated it because of its smaller size, slender stem, paler color, smaller spores and alkaline odor. It is also much smaller and paler than *M. purpureofusca*.

***Mycena crystallina*, n. sp.**

Pileus membranous, at first conical or convex, then nearly plane, sometimes with a slight umbo and reflexed margin, even or obscurely striate on the margin, everywhere beset with minute shining viscid glandular particles, pure white; lamellæ narrow, thin, adnate, close, white; stem short, slender, hollow, colored and adorned like the pileus, attached by white woolly hairs.

Pileus 2 to 5 lines broad; stem 4 to 8 lines long.

Fallen leaves of pine. Catskill mountains. September.

The species belongs to the *Basidipes* and is closely related to *M. saccharifera*, from which it is separated because of its larger size, more numerous closer adnate lamellae and pure white color. The glands occur in every part of the plant and cause it to appear as if slightly sticky or viscid when pressed between the fingers. They are not visible to the naked eye, but under a lens they appear like minute globular shining particles. In the dried state the specimens assume a slight yellowish tint.

***Entoloma sericeum*, Bull.**

Sandy pastures. West Albany. June.

***Entoloma flavoviride*, n. sp.**

Pileus thin, at first broadly conical, then convex or subconcave by the upcurving of the margin, dingy yellowish-green, slightly silky and shining when dry; lamellae broad, subdistant, ventricose, free or slightly adnexed, dingy or cinereous; stem equal, hollow, fibrous-striate, whitish; spores angular, uninucleate, .00045 to .0005 in. long, .0003 to .0004 broad.

Pileus 6 to 12 lines broad; stem 1 to 2.5 in. long, 1 to 2 lines thick. Low swampy woods. Karner. August.

The color of the pileus is a peculiar dingy yellowish-green or olive-green by which the species is easily recognized.

***Clitopilus erythrosporus*, n. sp.**

Pileus thin, hemispherical or strongly convex, glabrous or merely pruinose, grayish-incarnate, flesh whitish with an incarnate tint, taste farinaceous; lamellae narrow, crowded, arcuate, strongly decurrent, colored like the pileus; stem equal or slightly tapering upward, hollow, slightly pruinose at the top, colored like the pileus; spores elliptical, rosy-red, .0002 in. long, .00012 to .00016 broad.

Pileus 1 to 2 in. broad; stem 1 to 1.5 in. long, 2 to 3 lines thick.

Decayed wood and among fallen leaves in woods. Catskill mountains and Menands. September and October.

The species is easily recognized by its peculiar uniform color, its narrow, crowded and very decurrent lamellae and its bright rosy-red spores.

***Clitopilus conissans*, n. sp.**

Pileus thin, convex, glabrous, pale alutaceous, often dusted by the copious spores; lamellae close, adnate, reddish-brown; stem slender, brittle, hollow, white; spores narrowly elliptical, bright rosy red, .0003 in. long, .00016 broad.

Plant caespitose; pileus 1 to 1.5 in. broad; stem 1 to 2 in. long, 1 to 2 lines thick.

A single tuft of this peculiar species was found growing at the base of an apple tree in the Catskill mountains, in September. The species is remarkable for the copious bright colored spores which were so thickly dusted over the pilei of the lower specimens as to conceal the real color of the surface. They are quite as bright as and a little longer than those of the preceding species. The general aspect of the plant with its dark colored lamellæ is suggestive of some species of *Hypholoma* or *Psilocybe*, but the color of the spores requires its insertion in this place.

***Clitopilus caespitosus* n. sp.**

Pileus at first convex, firm, nearly regular, shining white, then nearly plain, fragile, often irregular or eccentric from its tufted mode of growth, glabrous but with a slight silky luster, whitish, flesh white, taste mild; lamellæ narrow, thin, crowded, often forked, adnate or slightly decurrent, whitish, becoming dingy or brownish-incarnate; stem caespitose, solid, silky-fibrillose, slightly mealy at the top, white; spores very pale incarnate, .0002 in. long, .00016 broad.

Pileus 2 to 4 in. broad; stem 1.5 to 3 in. long, 2 to 4 lines thick.

Thin woods and pastures. Catskill mountains. September.

This is a large, fine species, very distinct in its caespitose habit, white color and very pale, sordid tinted spores. But for the color of these the plant might easily be taken for a species of *Clitocybe*. The tufts sometimes form long rows:

***Pholiota minima*, n. sp.**

Pileus membranous, hemispherical or campanulate, umbonate, glabrous, hygrophanous, brown and striatulate when moist, pale buff or yellowish-white when dry; lamellæ rather close, subventricose, adnexed, ferruginous; stem slender, solid, glabrous, shining, similar to the pileus in color, annulus near the middle, slight, evanescent; spores elliptical, .0003 in. long, .0002 broad.

Pileus 2 to 4 lines broad; stem 8 to 12 lines long, .5 line thick.

Among *Polytrichum*. Catskill mountains. September.

The species is distinguished from *P. mycenoides*, to which it is closely related, by its smaller size, paler color, umbonate pileus and solid stem.

***Inocybe fibrillosa*, n. sp.**

Pileus thin, convex or nearly plain, obtuse or subumbonate, densely fibrillose, tawny, the disk usually darker in color and adorned with appressed fibrillose scales; lamellæ close, adnate, at first yellowish or

yellowish-olivaceous, then cinnamon-brown; stem equal, hollow, fibrillose-squamose, pallid; spores even, .0004 in. long, .00025 broad.

Pileus 10 to 18 lines broad; stem about 1 in. long, 1 to 2 lines thick. Damp mossy banks in woods. Bethlehem, Albany county. August. The species belongs to the Squarrosæ.

***Inocybe subfulva*, n. sp.**

Pileus at first broadly conical or subcampanulate, then convex or nearly plane, umbonate, fibrillose-squamose, tawny-ochraceous; lamellæ broad, close, rounded behind, adnexed, ventricose, pallid, becoming tawny-cinnamon; stem, equal, firm, solid, fibrous-striate, obscurely pruinose, a little paler than the pileus; spores stelletely rough, .0004 to .0005 in. long, .0003 to .00035 broad.

Pileus 8 to 16 lines broad; stem 1 to 2 in. long, 1 to 2 lines thick. Sandy soil, in fields. Selkirk. August.

Related to *I. calospora*, from which it differs in the erect scales of the pileus, the adnexed lamellæ, the solid stem and the somewhat elliptical shape of the spores. The species belongs to the Lacersæ.

***Inocybe violaceifolia*, n. sp.**

Pileus thin, convex or nearly plane, fibrillose, subsquamulose, grayish; lamellæ close, adnexed, at first pale violaceous, then brownish-cinnamon; stem firm, solid, slender, fibrillose, whitish; spores even, .0004 in. long, .00025 broad.

Pileus 6 to 12 lines broad; stem about 1 in. long, 1 line thick. Mossy ground in woods. Selkirk. August.

A small, pale species, remarkable for the violaceous tint of the young lamellæ. It belongs to the Rimosæ.

***Inocybe asterospora*, Quel.**

Woods and open places. Sandlake. June. South Ballston. July.

***Inocybe margarispora*, Berk.**

Grassy ground in thin woods. Greenbush, Rensselaer county. June. Our specimens are a little smaller than the typical ones, but they appear to belong to this species.

***Inocybe commixta*, Bres.**

Adirondack mountains. July.

***Inocybe agglutinata*, n. sp.**

Pileus at first conical, then campanulate or convex, umbonate, fibrillose, pale tawny, streaked or spotted with appressed fibrils, the umbo usually darker; lamellæ close, broad, ventricose, adnexed, at first whitish, then brownish-cinnamon, often white on the edge; stem firm, solid, white or whitish and pruinose above, brownish or tawny and fibrillose below; spores even, .0004 to .00045 in. long, .0002 to .00024 broad.

Pileus 6 to 12 lines broad; stem 1 to 2 in. long, 1 to 2 lines thick. Under pine trees. Catskill mountains. September.

This is a beautiful and well marked species. The fibrils of the pileus appear as if agglutinated to its surface, though it is not viscid. Sometimes they form tawny spots like appressed scales. In very wet weather they are apt to wash away and disappear. In general appearance the plant resembles *I. Whitei*, but the umbonate dry pileus at once distinguishes it. The real affinity is with *I. geophylla*.

***Inocybe nigridisca*, n. sp.**

Pileus thin, at first convex, then nearly plane or somewhat centrally depressed, umbonate, moist, minutely fibrillose, blackish-brown with a grayish margin when moist, cinereous when dry; lamellæ close, rounded behind, free or slightly adnexed, at first grayish, then ferruginous-brown, sometimes tinged with yellow; stem slender, firm, solid, flexuous, minutely villose-pruinose, reddish-brown; spores nodulose, .0003 in. long, .0002 broad.

Pileus 4 to 8 lines broad; stem 1 to 1.5 in. long, .5 line thick.

Under cinnamon fern, *Osmunda cinnamomea*. Kasoag. Oswego county. June.

The adornment of the pileus and stem is so minute that at first sight the plant appears to be glabrous. The margin of the pileus soon becomes elevated, causing the center to appear depressed. The species belongs to the Velutinæ. It is distinguished from *I. paludinella* by its darker color, and its moist or subhygrophanous character.

***Inocybe vatricosa*, Fr.**

Damp ground under willows. Catskill mountains. September.

The pallid color, decumbent stem and webby veil are characteristic of this species. The European plant is said to be inodorous, but our specimens had a radish-like odor. In it the spores are even, elliptical, .0004 in. long, .00024 broad. I find no description of the spores of the European plant. A variety with the disk reddish occurs in the same locality. It appears somewhat like a diminutive form of *Hebeloma longicaudum*.

Hebeloma crustuliniforme, Bull.

Open woods. Catskill mountains. September.

A small form, but exhibiting well the characters of the species.

Hebeloma longicaudum, Pers.

Woods. Catskill mountains. September.

In our plant the pileus is not umbonate, nor do all the descriptions ascribe this character to the species.

Flammula lubrica, Fr.

Decayed wood and ground among fallen leaves. Catskill mountains. September.

This species closely resembles *F. spumosa* in general appearance, but it may be distinguished by its somewhat spotted pileus and its white flesh. The spores also are paler than those of *F. spumosa*.

Flammula subfulva, n. sp.

Pileus convex, viscid, innately fibrillose, spotted toward the margin with darker appressed scales, sordid-tawny, flesh grayish-white; lamellæ close, adnate, brownish-ochraceous; stem equal or slightly tapering upward, fibrillose, solid, whitish; spores brownish-ochraceous, elliptical, uninucleate, .00024 to .0003 in. long, .00016 broad.

Pileus 1.5 to 2.5 in. broad; stem 2 to 3 in. long, 2 to 4 lines thick.

About the base of trees. Catskill mountains. September.

The plant is more or less caespitose. It is allied to *F. spumosa*, but differs in its tawny squamose-spotted pileus and grayish-white flesh.

Naucoria paludosa, n. sp.

Pileus very thin, broadly convex or plane, glabrous, hygrophanous, brown and striatulate on the margin when moist, buff-yellow when dry; lamellæ close, thin, rather broad, adnexed, at first yellowish or pallid, then brownish-ochraceous; stem slender, equal, hollow, brittle, glabrous, pallid or brownish; spores ferruginous, elliptical, uninucleate, .0004 in. long, .0002 broad.

Pileus 6 to 12 lines broad; stem 1 to 2 in. long, .5 to 1 line thick.

Wet, marshy or damp ground under willows and alders. Catskill mountains. September.

Naucoria unicolor, n. sp.

Pileus thin, broadly convex, plane or slightly depressed, glabrous, hygrophanous, yellowish-brown and striatulate on the margin when moist, paler when dry; lamellæ thin, close, slightly rounded behind,

colored like the pileus; stem equal, tough, hollow, glabrous, colored like the pileus, with white mycelium at the base; spores broadly elliptical, brownish-ferruginous, .00025 to .0003 in. long, .0002 broad.

Pileus 6 to 10 lines broad; stem 1 in. long, .5 to 1 line thick.

Decayed wood and old stumps of deciduous trees. Selkirk. August.

***Naucoria triscopoda*, Fr.**

Decayed wood. Catskill mountains. September.

Our specimens belong to the form having the pileus striatulate on the margin when moist. This form is figured and described in *Icones Selectæ* as *Agaricus triscopos*.

***Naucoria carpophila*, Fr.**

Borders of woods. Catskill mountains. September.

***Galera inculta*, n. sp.**

Pileus thin, somewhat fragile, campanulate, then convex or nearly plane, obtuse or rarely with a small umbo, hygrophanous, cinnamon color and striatulate when moist, buff color and atomate when dry, sometimes minutely pitted or corrugated, rarely rimose-squamulose; lamellæ broad, subdistant, ventricose, adnexed, white crenulate on the edge, at first pallid, then pale cinnamon; stem straight or subflexuous, hollow, brittle, slightly silky striate, reddish-brown, sometimes slightly pruinose-mealy at the top and white villose at the base; spores subelliptical, pointed at each end, brownish-ferruginous, .0006 to .00065 in. long, .0003 broad.

Pileus 6 to 12 lines broad; stem 1 to 1.5 in. long, .5 to 1 line thick.

Damp ground under willows and alders. Catskill mountains. September.

This is a very distinct species. The pileus, when dry, resembles in color that of *Galera tener*; when moist, that of *Clitocybe laccata* in its small glabrous striatulate form. The specimens were found growing with *Naucoria paludosa*, from which they may be distinguished by the more campanulate pileus, the broader, more distant lamellæ and the larger spores.

***Agaricus comptulus*, Fr.**

Cultivated ground. Menands. August.

Closely allied to *A. campestris*, from which it may be separated by its smaller size, the yellowish hue of the dry plant and by the smaller spores.

***Stropharia albocyanea*, Desm.**

Bushy pastures. Catskill mountains. September.

Psilocybe clivensis, B. & Br.

Borders of woods. Catskill mountains. September.

Psilocybe senex, n. sp.

Pileus thin, hemispherical, obtuse, hygrophamous, dark brown and striatulate when moist, pale cinereous and shining when dry, somewhat squamose with superficial subfasciculate whitish fibrils, the margin appendiculate with the same; lamellæ broad, subdistant, adnate, at first grayish, then brown or blackish-brown with a white edge; stem slender, hollow, fragile, minutely floccose-pruinose, subpellucid, white; spores brown, elliptical, .0003 in. long, .0002 broad.

Pileus 6 to 10 lines broad; stem 1.5 to 3 in. long, 1 line thick.

Decayed wood in woods. Catskill mountains. September.

The species is apparently related to *P. canifaciens*, but is at once distinguished by its slender white stem. The specific name has reference to the white hairs or fibrils of the pileus, which are suggestive of the white hairs of old age.

Deconica subviscida, n. sp.

Pileus thin, at first subconical, then convex or nearly plane, often slightly umbonate, glabrous, hygrophamous, pale chestnut or reddish tan color, subviscid and striatulate on the margin when moist, pallid or dull buff when dry; lamellæ broad, subdistant, adnate or slightly decurrent, at first whitish or dingy, then brownish ferruginous; stem equal or tapering downwards, fibrillose, hollow, brownish toward the base, paler above, the fibrils whitish or grayish; spores ovate, brown, .0003 in. long, .0002 broad.

Pileus 3 to 6 lines broad; stem about 1 in. long, 1 line thick.

Horse dung and manured ground. Menands. August.

This species has many characters in common with *D. bullacea*, from which I have separated it because of its scarcely viscid pileus without a separate cuticle, and its different spores. It is gregarious, and in wet weather appears in great abundance and in successive crops. The slight whitish veil is perceptible in the young plant.

Psathyrella minima, n. sp.

Pileus membranous, hemispherical, obtuse, obscurely striatulate when moist, even and pruinose-atomate when dry, dingy-yellow or reddish-brown, becoming paler in drying; lamellæ broad, adnate, white, becoming yellowish-cinnamon; stem capillary, minutely mealy or furfuraceous under a lens, pellucid, white; spores black, narrowly elliptical, .00025 to .0003 in. long .00012 to .00015 broad.

Pileus 1 to 2 lines broad; stem 4 to 6 lines long.

Excrement of deer in woods. Adirondack mountains. July.

About the size of and growing with *Coprinus radiatus* from which it is clearly distinct by its entire pileus and persistent adnate lamellæ.

Cortinarius balteatus *Fr.*

Grassy ground in pastures. Catskill mountains. September.

Our specimens belong to a form which may be called variety *bulbosus*. Stem strongly bulbous, at first almost wanting, the pileus appearing to rest on the bulb which is abruptly pointed beneath.

The typical form occurs in Europe and is said to grow especially under pine trees.

Cortinarius pluvius, *Fr.*

Woods. Catskill mountains. September.

Cortinarius muscigenus, *n. sp.*

Pileus at first ovate, then convex or concave from the recurving of the margin, subumbonate, glabrous, viscose with a separable pellicle, tawny-orange and widely striate on the margin when moist, tawny and shining when dry, flesh dingy white, tinged with yellow; lamellæ broad, ventricose, adnate, with a broad shallow emargination, somewhat rugose on the sides, yellowish, becoming cinnamon; stem long, subequal, viscid, even, silky, solid, white or whitish; spores .0005 to .0006 in. long, .0003 to .00036 broad.

Pileus 1.5 to 2.5 in. broad; stem 3 to 4 in. long, 3 to 4 lines thick. Mossy ground under balsam trees. Wittenberg mountain. September.

Closely related to *C. collinitus* from which it is separated by its more highly colored pileus, striate margin and even, not diffracted-squamose, stem.

Cortinarius brevipes, *n. sp.*

Pileus convex, silky-fibrillose, sordid white, flesh yellowish-white; lamellæ close, adnexed, pale violaceous becoming cinnamon; stem short, silky-fibrillose, bulbous, whitish, pale violaceous within; spores subelliptical, .0004 in. long, .00024 broad.

Pileus 1 to 2 in. broad; stem about 1 in. long, 4 to 6 lines thick. Woods. Catskill mountains. September.

The species belongs to the tribe Inoloma and is related to *C. albo-violaceus*, from which it is separated by its smaller size, short stem and yellowish-white flesh.

Cortinarius brevissimus, *n. sp.*

Pileus convex, often irregular, at first minutely silky, then glabrous, dingy white or argillaceous, flesh whitish; lamellæ close, adnexed, at first pale violaceous, then whitish, finally cinnamon; stem equal, very

short, hollow, silky-fibrillose, white, pale violaceous within; spores broadly elliptical, .00024 to .0003 in. long, .0002 to .00024 broad.

Pileus 8 to 12 lines broad; stem 5 to 8 lines long, 3 to 4 lines thick.

Thin woods. Catskill mountains. September.

Related to the preceding species, but smaller, with a hollow stem and shorter spores.

***Cortinarius albidifolius*, n. sp.**

Pileus thin, convex, subglabrous, whitish, tinged with yellow or pale ochraceous, the epidermis sometimes cracking and forming squamules, flesh whitish; lamellæ subdistant, slightly emarginate, adnate, whitish, becoming cinnamon; stem equal or slightly thickened at the base, solid, white, variegated below with yellowish floccose squamules, silky-fibrillose at the top; spores subglose or broadly elliptical; .00025 to .0003 in. long, .0002 to .00025 broad.

Pileus 1 to 2 in. broad; stem 2 to 3 in. long, 2 to 4 lines thick.

Woods. Catskill mountains. September.

Related to *C. ochroleucus*, but apparently distinct by the yellow scales of the stem and the adnate subdistant lamellæ. Both it and the preceding species belong to the tribe Dermocybe.

***Cortinarius spilomeus*, Fr.**

Woods. Catskill mountains. September.

***Cortinarius flavifolius*, n. sp.**

Pileus convex or nearly plane, fibrillose or squamulose, sometimes longitudinally rimose, varying in color from sordid buff to tawny yellow, flesh whitish; lamellæ subdistant, adnexed, at first a rich sulphur yellow, then yellowish cinnamon; stem slightly tapering upward, solid, whitish, peronate and slightly annulate by the copious silky, whitish veil; spores broadly elliptical, .0003 in. long, .0002 broad.

Pileus 2 to 3 in. broad; stem 2 to 3 in. long, 5 to 8 lines thick.

Woods. Catskill mountains. September.

The pileus is not truly hygrophanous, but the character of the stem indicates that the species belongs in *Telamonia* near *C. bivelus*. It differs from *C. limonius* by its dry pileus, and from *C. infucatus* by the color of the young lamellæ.

***Cortinarius griseus*, n. sp.**

Pileus convex, obtuse or gibbous, fibrillose-squamulose with grayish hairs or fibrils, moist, pale gray; lamellæ subdistant, adnexed, at first pallid, then brownish-ochraceous; stem tapering upward from a

thickened or bulbous base, silky-fibrillose, whitish; spores .0004 to .0005 in. long, .0003 broad.

Pileus 1 to 3 in. broad; stem 2 to 3 in. long, 3 to 6 lines thick.

Mossy ground under balsam trees. Wittenberg mountain. September.

The fibrils of the pileus are similar to those of *C. paleaceus*, but the plant is much larger and stouter, and the spores are larger than in that species. It is well marked by its grayish color.

Cortinarius badius, n. sp.

Pileus thin, at first conical, then convex or broadly campanulate, umbonate, hygrophanous, blackish-chestnut color when moist, bay-red or chestnut color when dry, sometimes tinged with gray, the umbo darker, usually whitish-silky on the margin when young, flesh, when moist, colored like the pileus; lamellæ broad, subdistant, ventricose, adnexed, at first yellowish or cream-color, then subochraceous; stem slender, equal, hollow, silky-fibrillose and subannulate by the whitish veil, when old colored like the pileus both without and within; spores .0005 in. long, .0003 broad.

Pileus 8 to 12 lines broad; stem 1 to 1.5 in. long, about 1 line thick.

Mossy ground. Catskill mountains. September.

The species is related to *C. nigrellus*, from which it differs in its broad lamellæ which are paler in the young plant and in its larger spores.

Cortinarius subflexipes, n. sp.

Pileus thin, conical, then expanded and subacutely umbonate, hygrophanous, blackish-brown with the thin margin whitened by the veil when moist, subochraceous when dry; lamellæ thin, close, ventricose, adnexed, at first reddish-violaceous, then cinnamon; stem equal, flexuous, silky, shining, subannulate by the whitish veil, pale violaceous when young, pallid or reddish when old; spores .00024 to .0003 in. long; .0002 broad.

Pileus 6 to 10 lines broad; stem 1 to 1.5 in. long, about 1 line thick.

Thin woods. Catskill mountains. September.

Apparently related to *C. flexipes*, from which I have separated it because of its more glabrous pileus and different lamellæ. It and the two preceding species are referred to the tribe Telamonina.

Cortinarius paleaceus, Fr.

Mossy or bare ground in open places. Catskill mountains. September.

Cortinarius rigidus, Fr.

Catskill mountains. September.

Hygrophorus Lauræ, Morg.

Woods. Catskill mountains. September.

The squamules at the top of the stem are sometimes reddish. The disc is sometimes yellowish.

Lactarius aspileus, Fr.

Borders of woods. Catskill mountains. September.

A pretty but rare species, easily known by its pale yellow or straw color and the lilac hue assumed by wounds of the lamellæ or flesh. In *Systema Mycologicum* the stem is described as hollow and spotted. In our specimens the stem is hollow but not spotted. It is colored like the pileus and the spores are broadly elliptical or subglobose; slightly rough, .0003 to .0004 in. long.

Lactarius maculatus, n. sp.

Pileus fleshy, firm, at first convex and umbilicate or centrally depressed, then subinfundibuliform, glabrous, viscid when moist, concentrically spotted, especially toward the margin, varying in color from grayish-buff to grayish-lilac, flesh subconcolorous, taste acrid and unpleasant; lamellæ close, thin, sometimes forked, adnate to decurrent, pallid or cream color; stem short, equal or tapering toward the base, hollow, spotted, colored like, or a little paler than, the pileus; milk at first whitish with a cream-colored tint, wounds of the flesh and lamellæ changing to lilac; spores subglobose, echinulate, .0004 to .0005 in. long.

Pileus 3 to 5 in. broad; stem 1 to 2 in. long, 5 to 8 lines thick.

Thin woods and pastures. Catskill mountains and Menands. August and September.

This species is allied to *L. uvidus*, with which it was united in the Thirty-eighth Report as variety *magnus*. Having had the opportunity of investigating it in the fresh state, it seems to me to be a distinct species, readily recognized by its larger size and its firmer, spotted pileus which is centrally depressed or infundibuliform. I have not seen it at all umbonate. The spots of the pileus are arranged in concentric circles and by their confluence the pileus often appears to be zonate. The change of color assumed by wounds is similar to that which takes place in *L. uvidus*.

Russula lepida, Fr.

Woods. Menands. August.

Generally with the pileus red, but quite variable in this respect.

Russula adulterina, Fr.

Low swampy ground. Karner. June.

This is placed by Fries as a variety of *R. integra*.

Russula atropurpurea, n. sp.

Pileus at first convex, then centrally depressed, glabrous, dark purple, blackish in the center, the margin even or slightly striate, flesh white, grayish or grayish-purple under the separable pellicle, taste mild, odor of the drying plant fetid, very unpleasant; lamellæ nearly equal, subdistant, sometimes forked near the stem, at first white, then yellowish, becoming brownish where bruised; stem equal, glabrous, spongy within, white, brownish where bruised; spores subglobose, minutely rough, pale ochraceous with a salmon tint, .0003 to .0004 in. long.

Pileus 3 to 4 in. broad; stem 2 to 3 in. long, 5 to 8 lines thick.

Open woods. Gansevoort. July.

In color this species resembles *R. variata*, but in other respects it is very different. It is very distinct in the peculiar color of its spores, and in the brownish hue assumed by wounds.

Boletus speciosus, Frost.

Woods. Sandlake and Bethlehem. August.

A beautiful species belonging to the Calopodes.

Boletus auriflammeus, B. & C.

A single specimen of this very rare but well-marked species was found in Sandlake. August.

Boletus purpureus, Fr.

Oak woods. Menands. August.

Boletus hemichrysus, B. & C.

Pine stumps. Gansevoort. July.

The Boleti are generally terrestrial fungi as affirmed by Professor Fries in Hym. Europ., but this species appears to be an exception to the prevailing habit of the genus. *B. subtomentosus*, *B. paluster* and *B. felleus* sometimes grow on decayed wood, but they are usually terrestrial. Of this species only three specimens have been seen, all of

which grew from the side of an old pine stump. The tomentum of the pileus is nearly one line thick. The species belongs to the tribe Pulverulenti.

***Boletus glabellus*, n. sp.**

Pileus fleshy, thick, broadly convex or nearly plane, soft, dry, subglabrous, smoky-buff, flesh white, both it and the tubes changing to blue where wounded; tubes nearly plane, adnate, small, subrotund, ochraceous tinged with green; stem subequal, glabrous, even, reddish toward the base, pallid above, adorned with a narrow reddish zone or circumscribing line at the top; spores oblong, brownish-ochraceous, with a tinge of green when fresh; .0004 to .0005 in. long, .00016 broad.

Pileus 3 to 5 in. broad; stem 1 to 3 in. long, 5 to 10 lines thick.

Grassy ground under oaks. Menands. July.

The species belongs to the Subpruinosi, and is easily distinguished from its allies by the reddish circumscribing line at the top of the stem. This disappears in the dried specimens.

***Boletus variipes*, n. sp.**

Pileus from convex to nearly plane, thick, soft, dry, squamulose, punctate-squamulose or minutely tomentose, pale grayish-brown, sometimes tinged with yellow or ochraceous, flesh white, unchangeable; tubes convex or nearly plane, slightly depressed around the stem, small, subrotund, at first white, then greenish-yellow, the mouths dingy ochraceous; stem nearly equal, firm, more or less reticulated, whitish or pallid; spores oblong-fusiform, brownish-ochraceous with a greenish tinge, .0005 to .0006 in. long, .0002 broad.

Pileus 3 to 6 in. broad; stem 2 to 4 in. long, 4 to 12 lines thick.

Oak woods. Menands. August.

The species belongs to the Edules. It is separated from *B. edulis* by its squamulose pileus. This character and its paler stem also separate it from *B. separans*. The stem is variable in color, length and degree of reticulation.

Variety *albipes*. Stem whitish, wholly reticulated, the reticulations coarser toward the base.

Variety *pallidipes*. Stem pallid, slightly scurfy, even or obscurely reticulated toward the base.

Variety *tenuipes*. Stem elongated, slender.

***Boletus indecisus*, n. sp.**

Pileus convex or nearly plane, dry, slightly tomentose, ochraceous-brown, often wavy or irregular on the margin, flesh white, unchangeable, mild; tubes nearly plane or convex, adnate, small, subrotund,

grayish, tinged with flesh color when mature, becoming dingy or brownish where wounded; stem minutely scurfy, often irregular or flexuous, reticulated at the top, pallid without and within; spores oblong, brownish flesh color, .0005 to .0006 in. long, .00016 broad.

Pileus 3 to 4 in. broad; stem 2 to 4 in. long, 4 to 6 lines thick.

Oak woods. Menands. August.

It belongs to the tribe Hyporhodie. It has the general appearance of *B. modestus*, but the tubes are not at all yellow. It differs from *B. alutarius* in color and in having the stem reticulated at the top, not serupose. Its mild taste will separate it from any form of *B. felleus*.

***Boletus albellus*, n. sp.**

Pileus convex, soft, glabrous, whitish, flesh white, unchangeable; tubes convex, free or nearly so, small, subrotund, whitish, not changing color when wounded; stem glabrous or minutely furfuraceous, substrate, bulbous or thickened at the base, whitish; spores brownish-ochraceous, .00055 to .00065 in. long, .0002 to .00025 broad.

Pileus 1 to 2 in. broad; stem 1 to 2 in. long, 3 to 6 lines thick.

Woods. Sandlake. August.

Closely related to *B. scaber*, of which it may possibly prove to be a dwarf form; but it is easily distinguished by its smooth or only slightly scurfy stem without any appearance of the colored dot-like squamules which are a constant and characteristic feature of that species.

***Polyporus flavovirens*, *B* and *R*.**

Ground in woods. Selkirk. August.

Our specimens agree very well with the description of *P. flavovirens*, except that they are smaller and the dry plant is not tough and fibrous. They are to this extent doubtful.

***Polyporus rimosus*, *Berk*.**

Trunks of locust, *Robinia pseudacacia*. Flatbush, L. I. Rev. J. L. Zabriskie.

***Polyporus mutans*, n. sp.**

Resupinate rather thick, tough, following the inequalities of the wood; pores minute, rotund, short, buff-yellow or cream color, becoming dingy red or dull incarnate where wounded, the subiculum fibrous, changing color like the pores, the whole plant assuming an incarnate hue when dried.

Decaying wood of deciduous trees. Selkirk. August.

Sometimes a narrow, reflexed obtuse margin of a yellowish-brown color is formed. The pores are often oblique. The species appears to be quite distinct by reason of its peculiar colors.

Polyporus pineus, n. sp.

Resupinate, irregular from the inequalities of the matrix, rather tender but separable from the matrix, the thin subiculum and margin whitish, sometimes tinged with yellow; pores rather large, angular, unequal, two to three lines long, often oblique and lacerated, dingy whitish, becoming blackish where bruised or wounded, the whole plant becoming blackish or blackish-brown in drying.

Wood and bark of pine. Selkirk. August.

The species is apparently allied to *P. obliquus*, but the pores can not be described as very small, nor has our plant an "erect crested margin." It has a distinct subiculum on which the pores are formed and by reason of which the plant is separable from the matrix.

Merulius Ravenelii, Berk.

Bark of prostrate trunks of spruce, *Abies nigra*. Adirondack mountains. July to September.

This fungus varies in hue from flesh color to dark smoky red or brownish-red. The pores are at first shallow with obtuse folds or dissepiments, but with age these become thinner and the pores deeper so that the plant might easily be taken for a *Polyporus*. Its pure white margin contrasts conspicuously with its dark waxy hymenium. The specimens labeled *Merulius serpens* in Ravenel's *Exsiccati*, Vol. IV, 9, belong to this species.

Merulius himantioides, Fr.

Prostrate trunks of hemlock. Catskill mountains. September.

The color of the hymenium resembles that of *M. lacrymans*, but the subiculum is very different. The fungus is soft, tender and membranous, and by confluence becomes widely effused. The subiculum is sometimes studded with drops of a reddish color, and is composed in part of branching strings of mycelium.

Hydnum fasciatum, n. sp.

Pileus thin, coriaceous, nearly plane, umbilicate, blackish-brown, adorned with three to seven narrow elevated scabrous, tawny-gray concentric zones; aculei short, decurrent, ferruginous-brown; stem short, slender, tough, tawny-gray or blackish; spores subglobose, rough, .00016 in. broad.

Pileus 6 to 12 lines broad; stem 4 to 6 lines long.

Naked ground in woods. Catskill mountains. September.

The specimens were past maturity when collected, and the colors of young plants may vary somewhat from those here given. The species

is well marked by the peculiar elevated zones or lines of the pileus. The plant is closely gregarious, and sometimes the pilei are confluent. The relationship is with *H. connatum* and *H. zonatum*.

***Irpex nodulosus*, n. sp.**

Resupinate, forming suborbicular patches four to ten inches or more in diameter, subseparable; the subiculum thick, tough; the hymenium dentate-porous toward the thick definite margin, centrally nodulose and prolonged into unequal compressed truncate or laciniate, rarely terete acute aculei, whitish, centrally yellowish or pale ferruginous.

Bark of standing trunks of poplar. Gansevoort. July.

***Radulum pendulum*, Fr.**

Dead prostrate trunk of basswood, *Tilia Americana*. Argusville. July.

This is distinct from our other species by its reflexed pileate form. The pileus is whitish and pubescent, or at length nearly smooth. The species is quite rare.

***Corticium olivaceum*, Fr.**

Decayed wood. North Greenbush and Slingerlands.

***Clavaria albida*, n. sp.**

Plants 2 to 4 in. high, whitish; stem short, thick, generally tapering downwards, divided above into a few short, thick, much-branched ramuli, ultimate branches densely crowded, terminating in a few short, blunt teeth; flesh firm, dry, whitish, taste tardily acrid, then bitter; spores oblong, pale ochraceous, .0005 to .0006 in. long, .0002 broad.

Ground in thin woods. Menands. August.

The species has the structure of *C. botrytis* and *C. flava*, but it is readily distinguished from these by its uniform whitish color, the tips of the branches being concolorous.

***Clavaria densa*, n. sp.**

Tufts 2 to 4 in. high, nearly as broad, whitish or creamy-yellow, branching from the base; branches very numerous, nearly parallel, crowded, terete, somewhat rugose when dry, the tips dentate, concolorous; spores slightly colored, subelliptical, .0003 to .0004 in. long, .0002 to .00034 broad.

Ground in woods. Selkirk. August.

Apparently closely allied to *C. condensata*, but differing decidedly in color.

Geaster Schæfferi, Vitt.

Woods. Catskill mountains. September.

The interior stratum of the external peridium is very thick in the fresh plant and conceals the short pedicel of the inner peridium, but in the dried state this stratum contracts and exposes the pedicel, which is about one line long. This character distinguishes the species from *G. rufescens*.

Geaster vittatus, Kalchb.

Under pine trees. Catskill mountains. September.

The thin outer coat of the external peridium cracks in parallel lines, causing the laciniae or rays to appear as if striped with white longitudinal lines. This character gives name to the species and serves to distinguish it from *G. saccatus* to which it is otherwise very closely related.

Sphærospis carpinea, Sacc. & Br.

Dead twigs of water beech, *Carpinus Americana*. Menands. May.

Cercospora Gentianæ, n. sp.

Spots suborbicular, brown or reddish-brown, sometimes confluent; hyphæ amphigenous, short, subflexuous, slightly colored, .0006 to .0012 in. long, growing from minute blackish tubercles; spores more narrow than the hyphæ, cylindrical or gradually narrowed toward one end, one to three-septate, colorless, .0012 to .0024 in. long.

Living leaves of gentian, *Gentiana linearis*. Number Four, Adirondack mountains. July.

Oospera Cucumeris, n. sp.

Tufts loose, subconfluent, whitish or grayish, forming soft, velvety patches; hyphæ erect or diverging; spores catenulate, elliptical or oblong, colorless, .0004 to .0008 in. long, .00025 to .0003 broad.

Decaying fruit of muskmelon, *Cucumis Melo*. Menands. October.

Sporendonema myophilum, Sacc. in litt.

Hyphæ colorless, simple or branched, densely interwoven and forming a soft whitish somewhat waxy mass, some of them producing chains of globose or broadly-elliptical spores, .00016 to .0003 in. long.

Inhabiting the bodies of living mice. Binghamton. H. L. Griffis.

In the specimen contributed by Mr. Griffis the fungus had broken the skin of the mouse near the eyes, and also on the left shoulder. In the latter place the white patch was about six lines broad, and the ruptured margin of the skin had in some parts a bloody appearance. The mouse was said to be alive when caught, but it is quite probable

that the fungus would have killed it in a short time. It would be interesting to know if the fungus could be communicated to healthy mice in their food or otherwise, but my efforts to obtain a subject on which to try the experiment were unsuccessful.

Zygodesmus violaceofuscus, Sacc.

Roots of beech. Selkirk. August.

(D.)

REMARKS AND OBSERVATIONS.

Nymphæa odorata, Ait.

A form with very large leaves and flowers, equaling in size those of *N. tuberosa*, grows in the inlet of Beaver lake, Number Four, Lewis county. It has the decided and delightful fragrance of the ordinary form.

Rubus villosus, Ait. var. humifusus, T. & G.

Professor Dudley finds this variety near Ithaca. The variety *frondosus* is much more plentiful, and from it most of the cultivated varieties appear to have been derived, if we may judge by the character of the fruit offered for sale in the markets. It is less cylindrical, more acid and has larger seeds than the fruit of the typical form. I am quite confident that the true *R. villosus* would produce a fruit of far better quality, if brought under successful cultivation, and it seems strange that some of our enterprising nurserymen have not succeeded in introducing it into more frequent cultivation.

Vaccinium Canadense, Kalm.

A black-fruited variety of this valuable little shrub is plentiful at Number Four, Adirondack wilderness. There is also a black-fruited variety of *V. vacillans*.

These varieties do not appear to have been designated by name, but they correspond to variety *nigrum* of *V. Pennsylvanicum* and variety *atrocoecum* of *V. corymbosum*. Thus each of our common edible blueberries has its black-fruited variety. These black fruits are destitute of the bloom of the ordinary ones, and have a shining luster, but are scarcely different in flavor or quality from the ordinary blue ones. The black huckleberry, *Gaylussacia resinosa*, also has its corresponding variety, in which the fruit is jet black and shining. It also sometimes differs slightly in shape from the ordinary dull black fruit.

Scirpus polyphyllus, Vahl.

Gansevoort. July. A rare species with us.

Scirpus Torreyi, Olney.

Beaver lake at the inlet from Beaver dam. July.

This is a form in which the cluster of spikes is subtended by a bract equaling or slightly exceeding it in length.

Lepiota amianthina, Scop.

Specimens sometimes approach *L. granulosa* in the structure of the lamellæ which are somewhat emarginate and adnexed, but in all other respects they are true *L. amianthina*.

Lepiota granulosa, Batsch. var. albida.

A persistently whitish variety. Pastures. Catskill mountains. September.

Tricholoma fumidellum, Pk.

In the Catskill mountains a form of this species occurs which has the pileus umbonate and the umbo decidedly brown or smoky brown. Sometimes the cuticle is rimose areolate and then the plant imitates *Lepiota cristata* in general appearance. It is moist in wet weather and belongs to the tribe Spongiosa.

Tricholoma fumosoluteum, Pk.

Abundant among moss under balsam trees near the summit of Wittenberg mountain. The pileus is sometimes spotted thus indicating a relationship with the tribe Guttata, though its real affinities are with the Spongiosa. The taste is farinaceous and slightly bitter. The flesh is tinged with yellow under the subseparable epidermis.

Tricholoma Peckii, Howe.

This rare species occurs in the Catskill mountains.

Both the pileus and stem are adorned with beautiful tawny or tawny-red scales. The lamellæ when old become stained or spotted with brown or are discolored or dotted on the edge. The white flesh of the pileus has a farinaceous taste, then bitterish. The odor is also somewhat farinaceous. The pileus is viscid when moist, and the species is allied to *T. transmutans* and *T. albobrunneum*.

Clitocybe nebularis.

A cæspitose form of the species was observed in the Catskill mountains. Also a form in which the whole plant is white. This is the common form in these mountains. It has the same shape as the typical form, from which it differs only in color.

Clitocybe laccata, Scop. var. amethystina.

Specimens of this beautiful variety were found at Menands and at Karner in August. Two forms occur, in both of which the pileus is umbilicate and dark violaceous when moist, canescent or greyish when dry; in one the pileus is about one inch broad, convex and regular; in the other it is two to two and a half inches broad, and has the margin reflexed and often much lobed and wavy. In this form the lamellæ are broad, distant and often ruptured transversely. They are also more highly colored than in the typical form. The ordinary form has been found growing in circles in grassy places.

Collybia lentinoides, Pk.

A description of this species was published in the Thirty-second Report. Two varieties have been observed the past season.

Variety *rufipes*. Stem even, colored reddish-alutaceous like the pileus. This variety closely resembles ordinary forms of *Collybia dryophila* in color, and but for the serrated edge of the lamellæ it might easily be taken for that species. Albany Rural cemetery. June.

Variety *flaviceps*. Pileus buff-yellow and striatulate on the margin when moist, pale buff when dry; stems cæspitose, hollow, whitish.

In all the forms the essential characters of the species are the glabrous, hygrophanous pileus, the lamellæ with serrated edge and the stuffed or hollow stem.

Collybia rubescentifolia, Pk.

In the Thirty-ninth Report this species was referred to *Tricholoma*, but subsequent observations indicate that it is a *Collybia*. The pileus is pretty constantly umbilicate and is hygrophanous, being dingy-yellow or smoky-yellow when moist and pale-yellow or buff when dry. The change in the color of the lamellæ in the dried plant is a marked and constant character, and is suggestive of the specific name. The species is closely allied to *C. luteoolivacea* B. & C., but no hygrophanous character is attributed to that species nor any change in the color of the lamellæ. Besides, its stem is described as scurfy.

***Mycena pura*, Pers.**

This species is quite variable in color. A form occurs under pine trees in the Catskill mountains, in which the whole plant has a purplish color, with the lamellæ a little paler than the pileus and stem. It is darker than the ordinary forms.

***Naucoria Highlandensis*, Pk.**

This was found in the Catskill mountains, growing on buried pieces of charcoal. This habitat is the same as that of *Flammula carbonaria*, a species to which our plant is evidently allied, but from which it is separated by its white flesh and its adnexed lamellæ.

***Stropharia Johnsoniana*, Pk.**

A form of this very rare species, which has hitherto been found in but one locality, occurs in the Catskill mountains. In it the pileus is wholly yellowish and sometimes marked with darker spots, and the stem is squamulose below the annulus, with upwardly directed squamules.

***Hygrophorus miniatus*, Fr.**

This species is very abundant in wet weather in all our woody and swampy districts, and is very variable in size and somewhat in color.

Variety *subluteus*. Pileus yellow or reddish-yellow, stem and lamellæ yellow, plant often caespitose.

Thin woods. Catskill mountains. September.

***Lactarius rufus*, Fr.**

Among moss, under balsam trees, near the summit of Wittenberg mountain. A small form, but very acrid, and thus distinguishable from large forms of *L. subdulcis*.

***Lactarius affinis*, Pk.**

This occurred plentifully in the Catskill mountains in September. It is readily distinguished from *L. insulsus* by the characters indicated in the Thirty-eighth Report.

***Lactarius scrobiculatus*, Fr.**

Fine specimens were found growing under hemlock trees in the Catskill mountains. The pileus in some was eight inches broad, pale yellow, very viscid, slightly zoned and distinctly bearded on the margin with coarse hairs.

***Russula sordida*, Pk.**

A large form of this species was found growing under hemlock trees at Gansevoort. The pileus was four to eight inches broad, at first white or whitish, umbilicate or centrally depressed; then more or less stained with smoky-brown, or blackish hues and subinfundibuliform. The flesh is white and taste mild; the stem is short, one to two inches thick, solid, white, and somewhat pruinose; the lamellæ are distant, unequal, very brittle, tinged with yellow. Every part of the plant turns blackish or violaceous-black where wounded. By this character it is distinguished from *R. nigricans*, in which the flesh at first becomes red where broken.

***Marasmius salignus*, Pk. var. *major*.**

Pileus six to ten lines broad; lamellæ broad, distant, decurrent, the interspaces venose; stems often caespitose.

Bark of willows. Gansevoort. July.

***Marasmius androsaceus*, Fr.**

Two forms of this species occur here as in Europe. There the form with paler pileus grows on fallen leaves of frondose trees, the one with darker or fuscous pileus on leaves of acerose trees. Here the form with pale pileus abounds, in wet weather, on fallen leaves of spruce trees, and the one with fuscous pileus on fallen pine leaves. Often the two forms grow in close proximity to each other, yet, in every instance observed, the difference of color corresponds to this difference in habitat.

***Marasmius præacutus*, Ellis.**

Fallen pine leaves. Catskill mountains. September.

***Polyporus cæruleoporus*, Pk.**

On exposure to the light the blue color gradually fades to a grayish hue. Sometimes specimens occur with one-half of the pileus exposed and faded, the other half sheltered and retaining its normal grayish-blue color. The pores retain the blue color longer than the pileus, but the whole plant fades in drying. The flesh of the pileus is white.

***Polyporus vulgaris*, Fr.**

A form with vesicular pores, a vertical section of the hymenium being porous, was found on poplar at Gansevoort. September. *P. obducens*, *P. adustus* and *P. subacidus* have all a similar vesicular form. I am satisfied that the genus *Myriadoporus*, which was founded on such forms, is not a good one and should be abandoned.

***Solenia villosa*, Fr. var. *polyporoidea*.**

At first granuliform, then cylindrical, often crowded and forming a continuous pure white stratum, appearing like a resupinate *Polyporus*, the villosity scarcely visible to the naked eye, but perceptible with a lens.

Decayed wood of hemlock. Adirondack mountains. July.

This differs from the typical form in its crowded mode of growth. Is it, therefore, a distinct species?

***Clavaria stricta*, Pers. var. *fumida*.**

The whole plant is of a dingy, smoky-brownish hue. Otherwise as in the typical form. Catskill mountains. September.

In the fresh state the specimens appear very unlike the ordinary form, but in the dried state they are scarcely to be distinguished.

***Geoglossum microsporum*, C. & P.**

A rare species, not observed since its discovery in 1871, till it was again found this year in the Catskill mountains.

(E.)

FUNGI DESTRUCTIVE TO WOOD.

NOTE.—P. H. Dudley, C. E., has investigated the action of certain fungi upon railroad ties and wooden structures. At my request he has communicated to me some of the results of his investigations. These results are of such great practical and economic importance, that with his permission, I have added to this report a copy of his communication.

66½ PINE STREET, NEW YORK, December 5, 1887.

Prof. CHARLES H. PECK, *State Botanist*:

MY DEAR SIR. — The well established fact that the decay of all timber, under ordinary usages, is due to the growth of many species of fungi, gives to your long and patient work, in collecting, identifying and calling attention to different species, a value and bearing of practical importance hardly expected a few years since. The enormous annual consumption of timber by railroad companies, ship-builders, architects, manufacturers and farmers, in conjunction with the decreasing supply and increasing cost, gives value to any knowledge which will help check any unnecessary decay of timber.

The experience gained from the failures of many of the expensive efforts to preserve timber has shown that specific knowledge of the



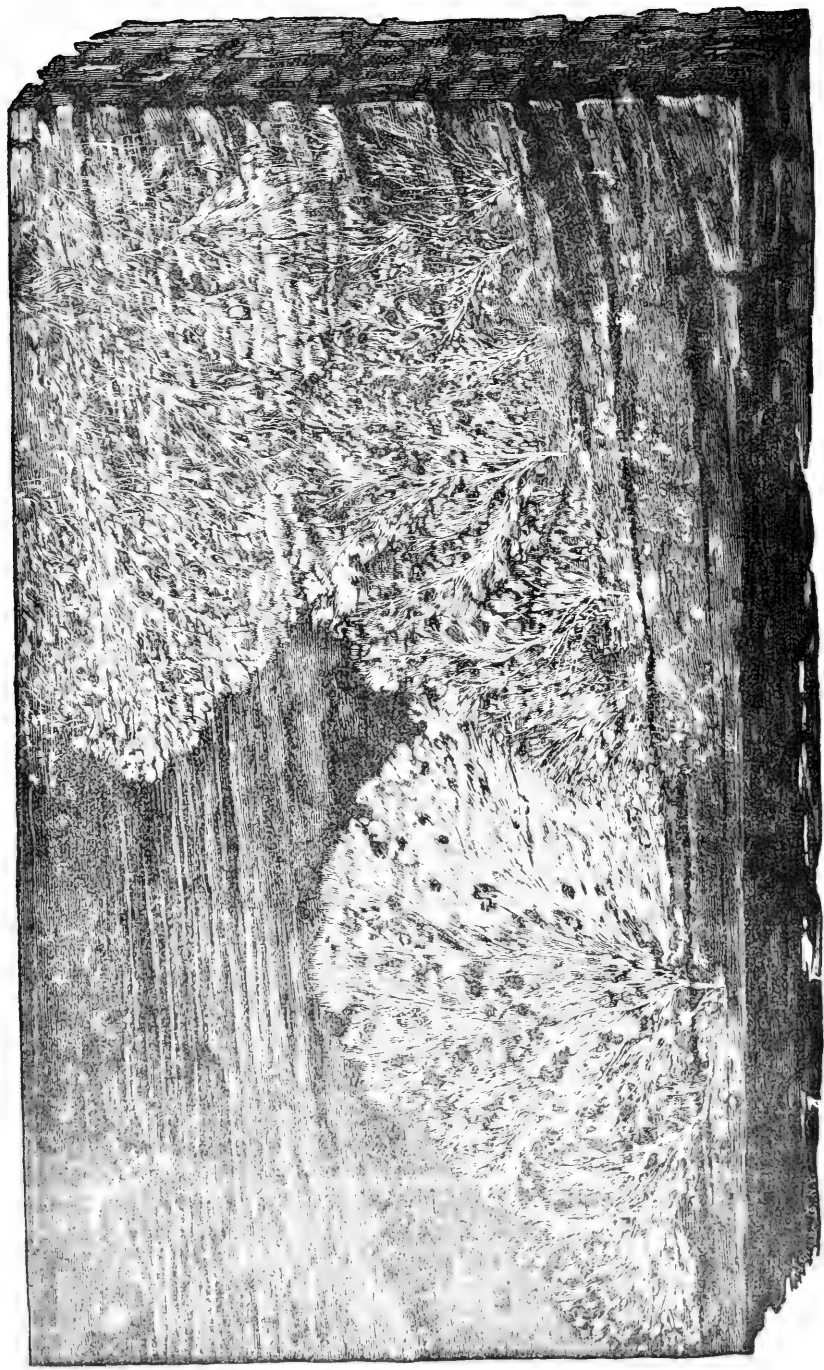


Fig. II. Mycelium of *Polyporus radula*, one-fourth size.

habitats and growth of definite species of fungi is required to best adapt the means to accomplish the desired work. Now that knowledge of the habitats of species of fungi has been acquired, simple and effective preventive measures suitable for many cases, without treatment, can at once be put into practice.

The study of the decay of timber used for construction is rendered very difficult, in most cases, from the fact that the entire structure of the wood may be destroyed by the growth of the mycelium, or its fermentative process, of the fungus without fructification taking place. This is especially true of railroad ties and bridge timbers. So little is seen in proportion to the destruction accomplished, it is due to this feature more than to any other, that the true function of the fungi on wood is not more generally understood by users and consumers of timber. It is not strange the idea is so prevalent that fungi are the accompaniments, instead of the cause of the decay of wood. A growth of mycelium, nearly similar to that shown in Fig. II,* of a fungus on the under side of a plank, as in station platforms or between boards when piled in close contact, has not been sufficient in most cases to call attention to the injury, if not the destruction of the plank or timber upon which it is growing.

Fig. II shows the mycelium of *Polyporus radula*, Fr. growing on the under side of a plank from a station platform. After the mycelium has run over the wood in a dense mass, then, by means of the fluids it generates — some of them having an acid reaction — the fibers or wood cells are softened and penetrated by the mycelium, and in this way the process of disorganization is carried on.

This causes the wood to shrink, crack, and finally fall to pieces.

The mycelium of many other species of the higher Fungi differs from this to some extent, but the final effect of its growth on and through the wood is to destroy it. Besides the visible mycelium there are many other growths and ferments, invisible to the eye, which cause a rapid internal decay of large unseasoned painted blocks, such as truck bolsters, transoms, buffers, dock timbers, and end sills to cars.

In warm and damp weather it is not uncommon for such growths to occur upon timber when piled in close contact, according to the species of wood and fungi, in three to eight weeks. In this vicinity the timber on which such growths have started may not be considered sufficiently injured for construction — to be rejected. If it is thoroughly

* Figures I, II and III are from my paper entitled "Woods and Their Destructive Fungi," in the *Popular Science Monthly*, August and September for 1886, and are used by permission of the editor, Prof. W. J. Youmans.

dried or seasoned before use, the decay commenced is checked and will not revive until the wood again becomes moist from external causes. On the contrary, if such wood is put into structures while damp and unseasoned, then painted or confined where the moisture is retained, the decay will continue, the rapidity depending upon the continued amount of damp and warm weather or equivalent conditions. This is commonly and erroneously called "dry rot." Decay of dry wood can not take place without moisture.

It is well established by numerous proofs that seasoned woods last in all conditions of service where it is unfavorable for the growth of fungi, and decay in all conditions where they can grow, unless the timber is judiciously treated. The propagation of fungi upon timber may be either by germination of spores, which are thrown off by thousands when in fructification and disseminated by the air, or by revival of mycelium already on or in the wood.

Besides the ever-present spores of a fungus or its mycelium in timber, three essential conditions in combination are necessary for the decay of wood, or in other words, the growth of a fungus.

First. Moisture, either external or internal.

Second. A temperature between 40° and 120° Fahr., 75° to 90° being the most favorable for the maximum growth of fungi.

Third. A small amount of air, still or nearly quiet. Free circulation or winds check the growth of mycelium when in direct contact with it.

When wood must be exposed to these three conditions, sooner or later, according to its structure and cell contents, fungi grow and destroy it as a result of a natural law of their growth. Therefore, to protect seasoned wood from decay, the combination mentioned must be prevented from taking place by rejecting either one of the three elements; or, if that is impossible, an antiseptic or preservative must be used to prevent the growth of any fungi. This brief statement comprehends, both theoretically and practically, what is necessary to be done to preserve timber structures from decay, but to reduce the principles to practice, so as to meet all conditions of service which may occur, requires a knowledge of the structure of the particular wood, its cell contents, size of stick to be used and care in seasoning. Also a knowledge of the special fungus or fungi attacking the species of wood, and the value and proper use of preservatives and antiseptics.

Species of fungi which I have found upon specific woods when used as railroad ties or in bridges.

The fungi peculiar to white oak, *Quercus alba*, L., are *Polyporus*

applanatus, Fr.; *P. versicolor*, Fr.; *P. pergamenus*, Fr.; *Dædalea unicolor*, Fr.; *D. quercina*, Pers., and *Lenzites vialis*, Pk.

Polyporus applanatus attacks the heart wood of the white oak tie and is very destructive, and requires a moderate amount of air and moisture for its growth. The characteristic decay of these ties is from the under to the upper side, and is most rapid in stone ballast, or a coarse ballast which retains a little moisture and permits access of air. In a ballast containing considerable loam, which checks the circulation of air, and in wet cuts, the growth of the mycelium is retarded and the durability of the ties increased. In porous ballast, unless wet, the deeper the white oak ties are imbedded the better are the conditions of the growth of the fungi and the more rapid the decay of the ties. On the contrary, only imbedding the ties sufficient for the stability of the track increases the service of the ties by retarding the rapidity of the upward growth of the mycelium.

Polyporus versicolor attacks the sap wood of white oak ties and posts, and to a limited extent the heart wood.

Polyporus pergamenus attacks those ties from which the bark has not been removed.

Dædalea unicolor, *D. quercina* and *Lenzites vialis* have been found on ties laid on railroad bridges.

The structure of the white oak is so firm and dense that it readily sustains the heaviest traffic and it is quite difficult to impregnate the internal cells of the ties. Unless a process has been used which would sterilize the spores lodged in the wood or possible traces of mycelium, the exterior treatment on the unseasoned wood prevents the escape of the internal moisture, the same as a coat of paint. This will hasten decay, for it furnishes the requisite conditions for fermentations and internal growth of mycelium.

The fungi attacking ties of the chestnut, *Castanea vulgaris*, variety *Americana*, A. D. C. (*Castanea vesca*, L., variety *Americana*, Mx.), are *Polyporus sulphureus*, Fr.; *P. spumeus*, Fr. ? ; *P. hirsutus*, Fr.; *P. versicolor*, Fr.; *P. pergamenus*, Fr.; *Agaricus Americanus*, Pk. and *A. sublateritius*, Schæff.

Polyporus sulphureus is also very destructive to telegraph poles and large posts, attacking them near the ground line.

The chestnut contains naturally a stronger antiseptic than the white oak and resists, in contact with the soil, the growth of the fungi until the antiseptic is destroyed by the air, or contact with the rails and spikes. The decay of the chestnut tie is from the top downwards; therefore the deeper the tie is imbedded the longer the body lasts. The full advantage of this is lost in

some degree from the decay which takes place around the spikes and under the rails, from the fact that the iron in contact with this wood neutralizes its natural antiseptic. The ends and centers of chestnut ties are sound after the rails have cut into the wood enough to necessitate their removal. The opinion is quite prevalent that they do not decay, but are mostly destroyed by mechanical abrasion; which is not the fact, for the microscope reveals the truth, the presence of the mycelium of a fungus and its destructive work on the wood fibers as an important reason of their rapid abrasion.

The chestnut is lighter than the white oak and many of the wood fibers much coarser, which enables it to be impregnated with an antiseptic quite readily. The large ducts of the two woods are about the same size. The medullary rays of the chestnut are fewer than of the white oak, and it is, therefore, more easily indented as a tie.

The fungus which principally attacks the white cedar, *Chamæcyparis sphaeroidea*, Spach., is *Agaricus campanella*, Batsch. It even attacks the growing tree, and in most cases its mycelium is found in the ties when cut. The tree is a very slow grower and, as the lower limbs become shaded, they die and are attacked by their special fungus, and this communicates with the upright cells of the tree. It takes from ten to twenty years before the limbs break off and the wound or orifice is closed by the growing wood. As long as air has access to the mycelium it slowly grows and destroys the wood above and below the wound, the decay spreading laterally very slowly, owing to the small medullary rays and the preservatives they contain. As soon as the orifice is closed, shutting off the air supply, the decay for the time is nearly if not entirely checked. When the trees are cut for ties it is not uncommon to find one or more decayed spots, from one-half to an inch in diameter, extending nearly the entire length of the tie.

The durability of the wood is so great that such ties are not rejected as long as there is sufficient sound wood for spiking. This wood contains a natural preservative and is very durable in contact with the soil, but its structure is too light and delicate to long withstand the heavy traffic of trunk lines, though from its durability it is valuable for those of moderate traffic.

The fungi which destroy ties made of Tamarack, *Larix Americana*, Mx., are *Polyporus pnicola*, Fr. and *Trametes Pini*, Fr.

The fruit of the former always shows traces of phosphoric acid.

This wood is heavier than white cedar, the wood cells being larger, with thicker walls. It is also much stronger because the cells in the annual layer formed in the autumn are nearly solid and in sufficient number to resist indentation or cutting of the ties by the rails under

heavy traffic. It is a wood which can be easily treated so as to resist the attacks of fungi, and such ties have lasted over thirty (30) years in actual service.

The fungi attacking the hemlock, *Tsuga Canadensis*, Carr., are numerous. The following is a list so far as observed:

Agaricus melleus, Vahl.

A. campanella, Batsch.

A. porrigens, Pers.

A. succosus, Pk.

A. rugosodiscus, Pk.

A. epipterygius, Scop.

Paxillus atrotomentosus, Fr.

Lenzites sepiaria, Fr.

Stereum radiatum, Pk.

Polyporus lucidus, Fr.

P. benzoinus, Fr.

P. epileucus, Fr.

P. Vaillantii, Fr.

P. subacidus, Pk.

P. medulla-panis, Fr.

P. pinicola, Fr.

P. abietinus, Fr.

P. borealis, Fr.

This wood does not contain any natural antiseptic or preservative, and is readily attacked by a host of fungi, and decays very quickly. It is heavier than white cedar, but lighter than the tamarack, and, when well preserved by metallic antiseptics, makes a valuable tie.

The fungi destroying the wood of yellow pine, *Pinus palustris*, Mill., are *Lentinus lepideus*, Fr. See Fig. I.

Sphaeria pilifera, Fr. See Fig. III.

Trametes Pini, Fr., and *Merulius lacrymans*, Fr.

The first is the most destructive to ties in this vicinity, the decay

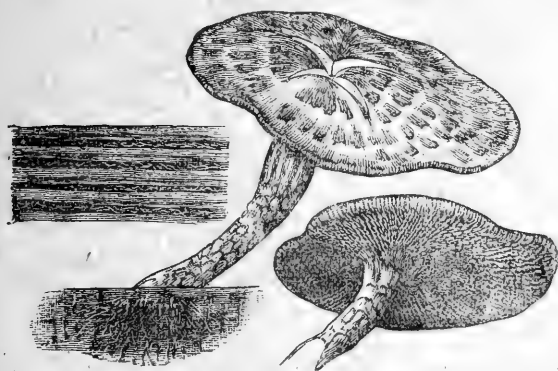


Fig. I. *Lentinus lepideus*, Fr. on Yellow Pine.

Showing the fruit of the fungus on, and the mycelium in, the wood. The size of the fruit varies from an inch to eight inches in diameter.

being most rapid on the bottom and extending upwards. In porous ballast the deeper the ties are imbedded the shorter the duration of service, so far as decay is concerned. The mycelium requires considerable moisture for its growth, and some air. A bal-

last which prevents a free circulation of the

latter checks its growth. The sun and wind check its growth and oftentimes a tie which looks sound upon the surface will be so badly decayed underneath that its removal from the track will be necessary.

The mycelium of this fungus is usually pure white, and is not killed by freezing in the wood. In bridges it is very destructive.

Trametes Pini is also found upon ties of this wood, but is confined to the portions above ground. It will grow and fruit with less moisture than *Lentinus lepideus*, but as far as observed, its rapidity of destruction is not so great.

The fungus shown in Fig. III appears on the sap-wood of yellow pine, giving it a dark, dingy appearance, and if the dampness continues fermentations are set up, destroying the wood.

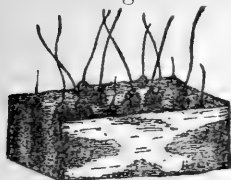


Fig. III. *Sphaeria pilifera*. Fr., magnified five diameters.

Sphaeria Pilifera attacks the sap-wood, discolours and quickly destroys this portion of the wood under favorable conditions for its growth. The resinous matter in yellow pine does not protect it in out-door situations, from attacks of the fungi mentioned.

The heart wood of yellow pine is so dense and firm that it is not readily penetrated by antiseptics. The same remarks in regard to imbedding white oak ties apply to this wood. In buildings, yellow pine is attacked by *Merulius lacrymans*, Fr., where it is warm and damp and the air stagnant.

White pine, *Pinus Strobus*, L., when used in bridges and trestles, is attacked by *Lentinus lepideus*, Fr., *Agaricus melleus* Vahl., *Polyporus Vaillantii* Fr. and, in warm inclosures, *Merulius lacrymans* Fr. Both the latter are very destructive.

There are many other woods whose structure is well adapted to their use as railroad ties, but which are so quickly destroyed by fungi as to be of no value unless judiciously treated. These are the beech, birches, elms and maples.

The above will be sufficient to call attention to the practical importance of a study of the fungi, in an economic sense as applied to the decay of wood.

The following simple but effective measures for the preservation of wood can at once be put in practice :

Timber, ties and boards should be seasoned before using, except when submerged. Green wood, according to the species, contains from twenty-five to forty-eight per cent of its weight of sap or moisture, and fully one-half these amounts must be removed to prevent decay in lumber painted on one side, or large sticks of timber painted on all sides, as buffers and car sills, transoms, truck bolsters and timbers.

All lumber and timber should be piled so there can be a free circulation of air around and between each board or stick. Stringers, six

to ten inches thick, should first be laid down, and the lumber piled on them in tiers, with narrow sticks between each board at the ends and centers. Grass and weeds should not be allowed to grow near the piles of lumber, impeding the circulation of air under them.

Large timber should be seasoned under sheds and not exposed to the rays of the sun, as the latter dries an exterior portion so rapidly that it prevents the proper escape of moisture from the outside, and internal decay is liable to occur.

If timber, ties or boards are piled in close contact, and remain so for any length of time, dampness will revive and start the growth of mycelium. It is not uncommon to see large sticks of timber, especially for freight cars, taken into the shops partially covered by mycelium, dressed, framed, put into cars and then painted, thus completing the essential condition for slow but certain decay. Such wood has only one-fourth to one-third the life of seasoned wood.

Boards, especially those used for sheathing freight cars, when piled

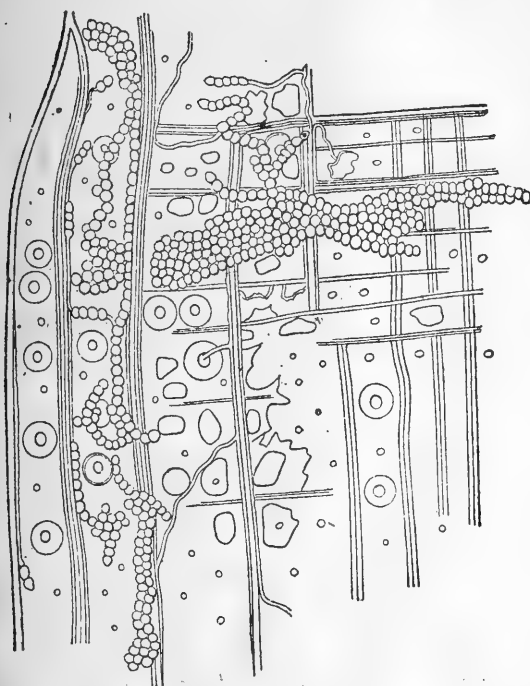


Fig. IV. Magnified 150 diameters, showing fungus-growths discoloring the sap-wood of white pine.

decay. Such boards, when put into cars and when moisture reaches the unpainted surface. This class of decay is

in close contact, in summer, are attacked in a short time by fungi, which discolor the wood by filling the cells with growths, often similar to those shown in Fig. IV.

The species of fungi which discolor the sapwood and then set up fermentations are exceedingly numerous and grow with great rapidity. Some of the forms found in white pine are spheres resembling those shown in Fig. IV.

This wood, on being dried, will remain discolored, but the seasoning will check the

decay. This class of decay is

not confined to cars and railroad structures, but exists also in buildings, wharves and docks, where timber forms the major part.

The reasons for the first steps in checking the present unnecessary decay of timber must be first understood before we can derive full benefits of more expensive and complex treatment of timber.

Yours truly.

P. H. DUDLEY.

(F.)

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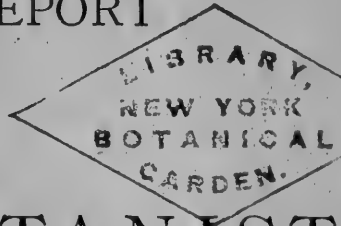
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[FROM THE 42d REPORT OF THE NEW YORK STATE MUSEUM OF NATURAL HISTORY.]

ANNUAL REPORT

OF THE



STATE BOTANIST

OF THE

STATE OF NEW YORK. 1888

Made to the Regents of the University, Pursuant to
Chapter 355, of the Laws of 1883.

BY CHARLES H. PECK.

ALBANY:

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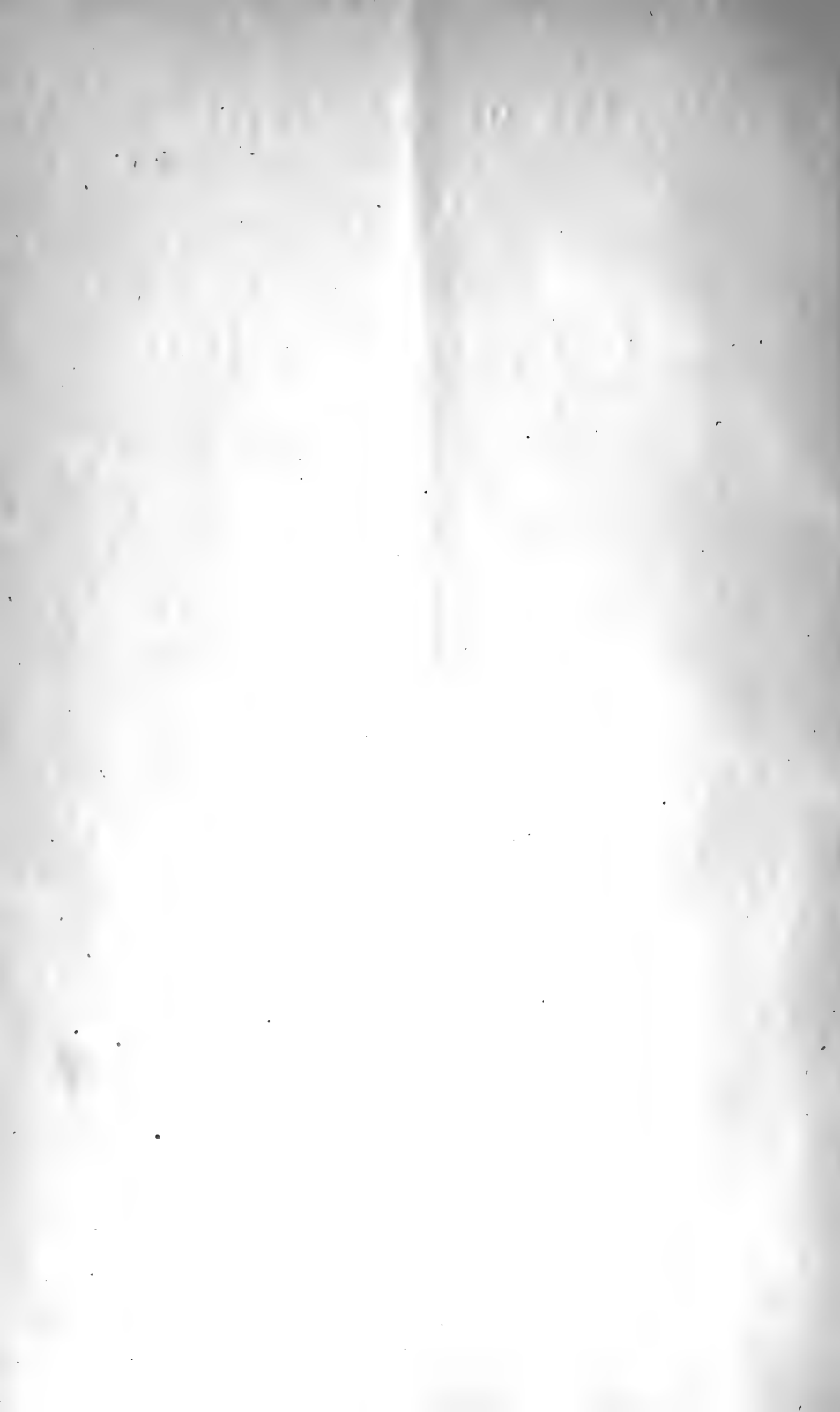
OFFICE OF THE STATE BOTANIST,
ALBANY, *February 25, 1889.* }

*To the Honorable the Regents of the University of the State of
New York:*

I have the honor to present to you my annual report for
the year 1888.

Very respectfully.

CHARLES H. PECK.



REPORT OF THE BOTANIST.

To the Honorable the Board of Regents of the University of the State of New York :

GENTLEMEN.—I have the honor of communicating to you the following report :

Specimens of plants for the State Herbarium have been collected by the Botanist during the season now closing, in the counties of Albany, Rensselaer, Saratoga, Essex, St. Lawrence, Jefferson, Lewis, Ulster, Orange and Suffolk. Specimens contributed by correspondents were collected in the counties of Orleans, Chenango, St. Lawrence, Rensselaer, Richmond and Queens.

Specimens representing two hundred and sixty-eight species of plants have been added to the Herbarium during the year, of which two hundred and fifty-three were collected by the Botanist and fifteen were contributed. Of the former, one hundred and eight are new to the Herbarium. The others are improved specimens, or such as exhibit some feature or variation in the species which was not well shown by the specimens already possessed. Of the contributed specimens, eleven species were not before represented, thus increasing the number of species now represented by one hundred and nineteen. Among these are forty species of fungi considered new to science. A list of the species of which specimens have been added is marked A.

Twenty-one persons have contributed specimens. Among the contributions are many extra-limital species not included in the foregoing enumeration. A list of the contributors and of their respective contributions is marked B.

A record of species not before reported, together with descriptions of such as are deemed new, is marked C.

Remarks concerning species previously reported, a record of new localities of rare plants and descriptions of varieties, will be found in a subdivision marked D.

Descriptions of New York species of *Clitopilus* are given in a section marked E.

The climatic conditions in the early part of the season were very unfavorable to the production of fleshy fungi. Very few even of the most common and ubiquitous species were seen. Dry weather prevailed, and the slight rains which fell were followed by such high winds and low temperature that few of these fungi could grow. But with the advent of more copious rains later in the season, an abundant crop of numerous species appeared. A visit to Essex county at this time was rewarded by large additions to the collection, many of which were new to the Herbarium. Places from which the timber had been cut many years ago and in which beautiful groves of young spruce, tamarack and balsam-fir trees had since grown were especially prolific, though everywhere on the wooded hills and in the mossy tamarack swamps the mycological flora was rich and varied. In these groves three esculent species were noticeable by reason of their great profusion. In every direction and at frequent intervals the brownish-red and tawny-red hues of groups and tufts of *Tricholoma imbricatum*, *T. vaccinum* and *T. transmutans* could be seen. They might have been gathered by bushels. But for the ignorance of the inhabitants concerning these plants, their tables and those of the large boarding houses there might have been supplied with an abundance of the novel but good and wholesome food which these three species would have furnished for the slight labor of gathering them. And other edible species were by no means rare or limited in quantity. *Geoglossum vitellinum*, a small but beautiful and tender fungus grew in such profusion in low woods where the ground is covered with moss, that it was tested as to its edible qualities and found to be very good. *Clitocybe media*, a new species, and *Tricholoma transmutans* were also tested for the first time. I have no hesitation in adding these three species to the list of edible fungi.

While collecting in this region the difference in the liability of certain kinds of wood to fungous attack was very apparent. Old stumps, prostrate trunks and decaying wood of spruce and balsam were inhabited by many species of fungi, while the wood and prostrate trunks of the tamarack and arbor-vitæ or white cedar in similar situations were almost entirely free from them. Thus

nature teaches, and the observant mycologist might affirm *a priori*, that the wood of these trees is much more durable than that of the spruce or of the balsam. The frequent use of spruce for fence posts in that region seems strange and unprofitable since tamarack is plentiful there and might be obtained almost as easily and as cheaply as spruce.

The beautiful rhodora, *Rhododendron Rhodora*, is a rare shrub in our State, and was but imperfectly represented in the Herbarium. Having learned of its occurrence on Sam's Point, a high rocky promontory-like spur of the Shawangunk mountains, lying about five miles east of Ellenville, I visited that locality in quest of specimens of it. Its usual habitat is "cool bogs," but here it was found growing in rocky rather than boggy places, though it was especially plentiful in a station not far from the shore of a small lake on the mountain. It was too late in the season to obtain its flowers which appear before the leaves are developed, but fine foliage and fruit-bearing specimens were secured. The broad plateau-like summit of the mountain proved to be an interesting botanical locality. Much of the vegetation is of a shrubby character. About sixty species of plants were noted, of which ten, or one-sixth of the whole, belong to the Heath family. The huckleberry, *Gaylussacia resinosa*, grows here in great profusion, and also the dwarf blueberry, *Vaccinium Pennsylvanicum*. These and the high-bush or swamp blueberry, *Vaccinium corymbosum*, afford a generous crop of fruit, in the picking of which some of the inhabitants of the vicinity were engaged at the time of my visit. The variations in the dwarf blueberry are worthy of notice. The typical form is common and the narrow-leaved dwarf variety is also present. There is also a form with pale green or glaucous foliage, approaching *V. vacillans* in appearance, but apparently distinct from it. This sometimes bore black shining berries destitute of bloom, thus approaching the variety *nigra*. Again it bore berries with the usual bloom, but of an oval shape, being longer than broad. Both this species and the huckleberry manifested their hardy character, their ability to grow under adverse circumstances, and their readiness to occupy all available space by frequently growing in long rows or lines, following the directions of crevices in the surface of the rock. A little soil had accumulated in these crevices, and this enabled these plants to maintain their foothold. These rows of shrubs curve and some-

times cross each other at various angles, and thus present a curious and somewhat artificial aspect. In a few boggy places the cranberry, *Vaccinium macrocarpum*, was growing.

The summit of the mountain is somewhat isolated and is exposed to sweeping winds from every direction. This, together with an altitude of 2,000 feet or more, and a very thin soil, must render the place a trying one for all except the most hardy species of plants. There is a marked tendency to dwarf development. The pitch pines have a starved misshapen appearance and bear cones when but one or two feet high. Specimens of chokeberry but eight or ten inches high were in fruit; also, the shad bush at two feet and the mountain holly at one foot. The narrow-leaved variety of the dwarf blueberry bore fruit though but three or four inches high. The coldness of the station is indicated by the presence of species usually found in more northern latitudes or in more elevated places. The rhodora already mentioned, the trifold rush, *Juncus trifidus*, the three-toothed cinquefoil, *Potentilla tridentata*, the slender cotton grass, *Eriophorum gracile*, and the Greenland sandwort, *Arenaria Greenlandica*, are examples of this kind. That which is manifestly a principle in nature receives confirmation here and is noticed because the existence of such a principle is sometimes overlooked. The principle to which reference is made is that a plant whose strength or vital force has been weakened or impaired by any cause, is more liable to suffer from the attacks of parasitic fungi than one whose vigor is unimpaired. The sheep laurel, *Kalmia angustifolia*, was badly infested by *Dothidella Kalmiae*, a fungus which attacks the branches of the living plant and causes them to increase in diameter and become blackened. Their leaves do not attain half their usual size and the branch eventually dies. This fungus is a rare one, and I have never seen vigorous healthy appearing plants affected by it. *Rhytisma Canadensis* is a more common fungus that attacks the foliage of the mountain holly, but rarely do its attacks equal in severity those on the plants of Sam's Point. This shrub here shows by its dwarf development that the conditions of growth are unfavorable and that its vigor is impaired. Scarcely a clump of the bushes was seen whose leaves were not excessively spotted by the blackened swellings of this fungus. The wild black cherry, *Prunus serotina*, in other places furnishes an illustration of this same principle. On Long Island, in light

sandy soil about Manor and Eastport, where it makes an unthrifty straggling growth, its branches are badly infested by the black knot fungus, *Plowrightia morbosa*, but in those parts of the State where the soil is richer in the elements of plant food, and these trees make a healthy, vigorous growth, they are almost entirely free from this fungus. The practical application of this principle is plain. If we would have our cultivated and useful plants as free as possible from the attacks of injurious parasitic fungi, we must maintain their constitutional vigor and give them a full supply of plant food.

Respectfully submitted,

CHARLES H. PECK.

ALBANY, December 10, 1888.

(A.)

PLANTS ADDED TO THE HERBARIUM.

New to the Herbarium.

- Hieracium præaltum* Vill.
Penstemon lævigatus Soland.
Physalis Peruviana L.
Quercus heterophylla Mx.
Q. Rudkini Britton.
Setaria verticillata Bv.
Apera spica-venti Bv.
Equisetum litorale Kuhl.
Lepiota augustana Britz.
Tricholoma imbricatum Fr.
T. subacutum Pk.
T. silvaticum Pk.
T. nobile Pk.
T. brevipes Bull.
T. microcephalum Karst.
Clitocybe media Pk.
C. gallinacea Scop.
C. tumulosa Kalchb.
C. angustissima Lasch.
C. subditopoda Pk.
Collybia butyracea Bull.
C. acervata Fr.
C. ignobilis Karst.
Omphalia striæpileus Fr.
O. tubæformis Pk.
Pleurotus mitis Pers.
Hebeloma firmum Pers.
Naucoria scirpicola Pk.
Galera rufipes Pk.
Psathyra silvatica Pk.
Cortinarius fulgens Fr.
C. lanatipes Pk.
C. canescens Pk.
C. erraticus Pk.
C. cæspitosus Pk.
C. lutescens Pk.
C. adustus Pk.
C. pallidus Pk.
Hygrophorus Queletii Bres.
H. capreolarius Kalchb.
H. hypothejus Fr.
H. fuscoalbus Fr.
Lactarius atroviridis Pk.
L. quietus Fr.
Russula purpurina Q. & S.
Cantharellus rosellus Pk.
Marasmius peronatus Fr.
Lenzites heteromorpha Fr.
Boletus floccopus Vahl.
B. hirtellus Pk.
B. subvelutipes Pk.
Polyporus piceinus Pk.
P. aureo-nitens Pat.
P. variiformis Pk.
P. rhodellus Fr.
P. marginellus Pk.
P. sulphurellus Pk.
Trametes Pini Pers.
Merulius aureus Fr.
M. molluscus Fr.
Phlebia vaga Fr.
P. acerina Pk.
Odontia Pruni Lasch.
O. fusca C. & E.
Thelephora scoparia Pk.
Corticium sulphureum Fr.
C. rhodellum Pk.
C. subincarnatum Pk.
Hymenochæte abnormis Pk.
Pistillaria viticola Pk.
P. alnicola Pk.
Mitremyces lutescens Schw.
Geaster fornicatus Fr.
Phyllosticta Negundinis S. & S.
P. serotina Cke.
P. Hibisci Pk.
Phoma Libertiana S. & R.
Diplodia Dulcamaræ Fckl.
Hendersonia Mali Thum.
Septoria Trichostematis Pk.
Sacidium lignarium Pk.
Aposphæria aranea Pk.
Vermicularia truncata Schw.
V. Wallrothii Sacc.
Dinemasporium hispidulum Sacc.
Glœosporium lagenarium S. & R.
G. Physalosporæ Car.
G. irregulare Pk.
Melanconium Tiliæ Pk.
M. foliicolum Pk.
Ustilago Osmunda Pk.
Synchytrium aureum Schræt.
Peronospora sordida Berk.
Monilia effusa Pk.

Monilia aurantiaca *Pk. & Sacc.*
Rhopalomyces Cucurbitarum *B. & R.*
Aspergillus fimetarius *Pk.*
Rhinotrichum ramosissimum *B. & C.*
Virgaria hydnicola *Pk.*
Fusicladium fasciculatum *C. & E.*
Septonema brevisculum *B. & C.*
Cercospora Epilobii *Schnd.*
C. Resedæ *Fekl.*
C. rhuina *C. & E.*
Sporocybe cellare *Pk.*
Helicomyces roseus *Lk.*
Tubercularia fungicola *Pk.*

Tuberculina persicina *Sacc.*
Ombrophila albiceps *Pk.*
Peziza scubalonta *C. & G.*
P. hinnulea *B. & Br.*
Calloria acanthostigma *Fr.*
Valsa coronata *Fr.*
Anthostoma turgidum *Nits.*
Anthostomella limitata *Sacc.*
Nummularia repanda *Fr.*
Chaetosphaeria longipila *Pk.*
Celidium stictarum *Tul.*
Micrococcus prodigiosus *Cohn.*

Not new to the Herbarium.

Aconitum Noveboracense *Gr.*
Brassica oleracea *L.*
Cakile Americana *Nutt.*
Arabis lyrata *L.*
Hibiscus Moscheutos *L.*
Vitis Labrusca *L.*
V. æstivalis *Mx.*
V. cordifolia *Mx.*
Rhamnus catharticus *L.*
Desmodium Marilandicum *Boott.*
Lespedeza Stuvei *Nutt.*
L. retic. v. angustifolia *Max.*
Rubus strigosus *Mx.*
R. Canadensis *L.*
Pyrus arbutifolia *L.*
Cratægus parvifolia *Ait.*
Proserpinaca pectinacea *Lam.*
Epilobium angustifolium *L.*
Oenothera biennis *L.*
O. fruticosa *L.*
Ammannia humilis *Mx.*
Discopleura capillacea *DC.*
Sium lineare *Mx.*
Lonicera oblongifolia *Muhl.*
Eupatorium purpureum *L.*
E. album *L.*
E. teucrifolium *Willd.*
Aster spectabilis *Ait.*
A. concolor *L.*
A. dumosus *L.*
Solidaga odora *Ait.*
S. nemoralis *Ait.*
S. humilis *Pursh.*
S. tenuifolia *Pursh.*
Pluchea camphorata *DC.*
Chrysopsis Mariana *Nutt.*
Coreopsis trichosperma *Mx.*

Artemisia Absinthium *L.*
Erechthites hieracifolia *Raf.*
Centaurea nigra *L.*
Gaylussacia frondosa *T. & G.*
Vaccinium Pennsylvanicum *Lam.*
Rhododendron Rhodora *Don.*
Penstemon pubescens *Soland.*
Pycnanthemum lanceolatum *Pursh.*
Stachys hyssopifolia *Mx.*
Cuscuta Gronovii *Willd.*
C. compacta *Juss.*
Asclepias incarnata *L.*
Atriplex patula *L.*
Amaranthus pumilus *Raf.*
Acnida cannabina *L.*
Polygonum Pennsylvanicum *L.*
P. hydropiperoides *Mx.*
P. maritimum *L.*
Euphorbia Ipecacuanhæ *L.*
Betula glandulosa *Mx.*
Sagittaria variabilis *Engelm.*
Trillium grandiflorum *Salisb.*
Lilium superbum *L.*
Juncus tenuis *Willd.*
J. Greenii *O. & T.*
J. Canadensis *Gay.*
Xyris Caroliniana *Walt.*
Cyperus diandrus *Torr.*
Eriophorum gracile *Koch.*
Scleria reticularis *Mx.*
Scirpus maritimus *L.*
S. debilis *Pursh.*
Carex sterilis *Willd.*
C. scoparia *Schk.*
Aristida dichotoma *Mx.*
Spartina juncea *Willd.*
Bouteloua racemosa *Lag.*

| | |
|-------------------------------------|-----------------------------------|
| <i>Paspalum setaceum</i> Mx. | <i>Hygrophorus miniatus</i> Fr. |
| <i>Panicum filiforme</i> L. | <i>Lactarius affinis</i> Pk. |
| P. pauciflorum Ell. | L. velleus Fr. |
| P. dichotomum L. | L. fuliginosus Fr. |
| P. crus-galli L. | L. albidus Pk. |
| <i>Equisetum palustre</i> L. | <i>Cantharellus minor</i> Pk. |
| E. variegatum Schleicher. | C. umbonatus Fr. |
| <i>Amanita muscaria</i> L. | <i>Marasmius anomalus</i> Pk. |
| <i>Lepiota metulispora</i> B. & Br. | <i>Lenzites vialis</i> Pk. |
| <i>Armillaria mellea</i> Vahl. | L. sepiaria Fr. |
| <i>Tricholoma laterarium</i> Pk. | <i>Boletus rubinellus</i> Pk. |
| T. leucocephalum Fr. | B. subtomentosus L. |
| <i>Clitocybe pithyophila</i> Fr. | B. porosus Pk. |
| C. candicans Pers. | B. flavipes Pk. |
| C. anisaria Pk. | B. Russellii Frost. |
| C. cyathiformis Fr. | B. felleus Bull. |
| C. clavipes Pers. | <i>Polyporus cæruleoporus</i> Pk. |
| <i>Collybia maculata</i> A. & S. | P. chioneus Fr. |
| C. cirrhata Schum. | P. spumeus Fr. |
| C. rubescentifolia Pk. | P. pubescens Fr. |
| <i>Omphalia chrysophylla</i> Fr. | P. biformis Fr. |
| <i>Mycena pura</i> Pers. | P. versicolor Fr. |
| M. atromarginata Fr. | P. conchifer Schw. |
| <i>Pleurotus lignatilis</i> Fr. | P. pergamenus Fr. |
| <i>Entoloma sarcophyllum</i> Pk. | <i>Trametes sepium</i> Berk. |
| <i>Clitopilus abortivus</i> B. & C. | <i>Dædalea confragosa</i> Pers. |
| C. Noveboracensis Pk. | D. unicolor Fr. |
| <i>Pholiota discolor</i> Pk. | <i>Hydnum adustum</i> Schw. |
| <i>Inocybe umboninota</i> Pk. | H. ochraceum Pers. |
| <i>Flammula spumosa</i> Fr. | <i>Irpex lacteus</i> Fr. |
| F. alnicola Fr. | <i>Sistotrema confluens</i> Pers. |
| <i>Agaricus campestris</i> L. | <i>Stereum complicatum</i> Fr. |
| <i>Stropharia Johnsoniana</i> Pk. | S. Curtisii Berk. |
| <i>Hypholoma appendiculatum</i> Fr. | <i>Clavaria pusilla</i> Pk. |
| <i>Coprinus radiatus</i> Fr. | C. argillacea Fr. |
| <i>Hygrophorus pudorinus</i> Fr. | C. fragilis Holmek. |
| H. coccineus Fr. | C. rugosa Bull. |
| H. chlorophanus Fr. | |

(B.)

CONTRIBUTORS AND THEIR CONTRIBUTIONS.

Mary E. Banning, Baltimore, Md.

Geaster triplex Jungh.*Geaster striatus* DC.

G. saccatus Fr.

Tulostoma mammosum Fr.

Mrs. E. C. Anthony, Gouverneur, N. Y.

Geaster fornicatus Fr.*Geaster mammosus* Chev.

Mrs. E. G. Britton, New York, N. Y.

Rudbeckia hirta L.

Thomas G. Gentry, Philadelphia, Pa.

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| Polyporus Ribis <i>Fr.</i> | Sparassis spathulata <i>Fr.</i> |
| P. annosus <i>Fr.</i> | S. laminosa <i>Fr.</i> |
| Hydnum Schiedermayeri <i>Heufl.</i> | Corticium rhodellum <i>Pk.</i> |

F. V. Coville, Oxford, N. Y.

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|---------------------------------------|--|
| Aconitum Noveboracense <i>Gr.</i> | Polygonum articulatum <i>L.</i> |
| Valerianella radiata <i>Dupr.</i> | P. Hartwrightii <i>Gr.</i> |
| V. Woodsiana v. patellaria <i>Gr.</i> | Listera cordata <i>R. Br.</i> |
| Polemonium cæruleum <i>L.</i> | Microstylis ophioglossoides <i>Nutt.</i> |
| Arceuthobium pusillum <i>Pk.</i> | Sagittaria graminea <i>Mx.</i> |
| Quercus ilicifolia <i>Wang.</i> | Eleocharis quadrangulata <i>R. Br.</i> |
| Q. prinoides <i>Willd.</i> | Equisetum litorale <i>Kuhl.</i> |
| Orontium aquaticum <i>L.</i> | E. variegatum <i>Schl.</i> |

Prof. A. N. Prentiss, Ithaca, N. Y.

Graphiola Phoenicis *Poit.*

F. W. Anderson, Great Falls, Mont.

Ustilago Montanensis *E. & H.*

J. N. Bishop, M. D., Plainville, Conn.

Peridermium oblongisporium *Fekl.*

W. H. Hailes, M. D., Albany, N. Y.

Agaricus arvensis *Schæff.*

E. C. Howe, M. D., Lansingburgh, N. Y.

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|---------------------------------|-----------------------------------|
| Setaria verticillata <i>Bv.</i> | Bouteloua racemosa <i>Lag.</i> |
| S. Germanica <i>Bv.</i> | Eleocharis diandra <i>Wright.</i> |
| Apera spica-venti <i>Bv.</i> | Carex sterilis <i>Willd.</i> |
| Panicum pauciflorum <i>Ell.</i> | |

C. F. Wheeler, Hubbardston, Mich.

Plowrightia morbosa *Sacc.*

Emily F. Paine, Albany, N. Y.

Aster multiflorus *Ait.*

E. S. Goff, Geneva, N. Y.

Helminthosporium carpophilum *Lev.* | Stemonitis herbatia *Pk.*

William Herbst, M. D., Trexlertown, Pa.

Cordyceps capitata *Lk.*

Arthur Hollick, New Brighton, N. Y.

| | |
|---------------------------------|---------------------------|
| Quercus heterophylla <i>Mx.</i> | Quercus Phellos <i>L.</i> |
| Q. Rudkini <i>Britton.</i> | |

C. E. Fairman, M. D., Lyndonville, N. Y.

Corticium rhodellum *Pk.*

Rev. J. L. Zabriskie, Flatbush, N. Y.

| | |
|-------------------------------|------------------------------------|
| Sacidium lignarium <i>Pk.</i> | Sporocybe cellare <i>Pk.</i> |
| Aposphaeria aranea <i>Pk.</i> | Chætosphaeria longipila <i>Pk.</i> |

Hon. W. L. Learned, Albany, N. Y.

Marsilia quadrifolia L.

Prof. William Trelease, St. Louis, Mo.

Lycoperdon Missouriense Trel.
L. *saccatum* Fr.*Tulostoma fimbriatum* Fr.

Prof. A. S. Hitchcock, Iowa City, Ia.

Synchytrium Anemones Wor.
S. *decipiens* Farl.
Peronospora effusa Rabh.
P. *Ficariæ* Tul.
P. *gangliformis* DeBy.
P. *Arthuri* Farl.
P. *Euphorbiæ* Fekl.
P. *Lophanthi* Farl.
P. *parasitica* DeBy.
P. *Potentillæ* DeBy.
P. *Halstedii* Farl.
P. *Geranii* Pk.
P. *graminicola* Sacc.
P. *Trifoliorum* DeBy.
P. *pygmæa* Ung.
P. *viticola* DeBy.
Cystopus candidus Lev.
C. *Portulacæ* Lev.
C. *Bliti* DeBy.

Podosphæria tridactyla DeBy.
Sphærotheca pannosa Lev.
S. *Castagnei* Lev.
Microsphæria extensa C. & P.
M. *diffusa* C. & P.
M. *Ampelopsidis* Pk.
M. *Russellii* Clint.
M. *Symphoricarpi* Howe.
M. *Friesii* Lev.
Erysiphe lamprocarpa Lev.
E. *tortilis* Fr.
E. *Martii* Lev.
Uncinula adunca Lev.
Darluca filum Cast.
Peziza Dehnii Rabh.
Phyllactinia suffulta Sacc.
Phyllachora graminis Fekl.
P. *Trifolii* Fekl.
Claviceps purpurea Tul.

J. M. Holsinger, Winona, Minn.

Anemone Virginiana L.
Ranunculus rhomboideus Goldie.
Delphinium azureum Mx.
Isopyrum biternatum T. & G.
Berberis repens Lindl.
Cardamine rhomboidea DC.
Silene nivea DC.
Malvastrum coccineum Gr.
Ceanothus ovalis Bigel.
Amorpha canescens Nutt.
Baptisia leucophæa Nutt.
B. *leucantha* T. & G.
Glycyrrhiza lepidota Pursh.
Lathyrus venosus Muhl.
Oxytropus Lamberti Pursh.
Petalostemon candidus Mx.
P. *violaceus* Mx.
Psoralea argophylla Pursh.
Heuchera hispida Pursh.
Oenothera serrulata Nutt.
Eryngium yuccæfolium Mx.
Symphoricarpus occidentalis R. Br.
Galium concinnum T. & G.

Valeriana edulis Nutt.
Vernonia fasciculata Mx.
Liatris pycnostachya Mx.
Kuhnia eupatorioides L.
Solidago speciosa Nutt.
Aster azureus Ait.
Boltonia asteroides L'Her.
Coreopsis palmata Nutt.
Silphium perfoliatum L.
S. *laciniatum* L.
Bidens connata Muhl.
Artemisia caudata Mx.
A. *Ludoviciana* Nutt.
A. *frigida* Willd.
A. *dracunculoides* Pursh.
Dodecatheon Meadia L.
Acerates longifolia Ell.
Gentiana alba Muhl.
G. *Andrewsii* Griseb.
Phlox maculata L.
Ellisia Nyctelea L.
Lithospermum angustifolium Mx.
Cuscuta glomerata Choisy.

Lycium vulgare Dunal.
Castilleja sessilifolia Pursh.
Penstemon gracilis Nutt.
P. *grandiflorus* Nutt.
Verbena bracteosa Mx.
V. *stricta* Vent.
Hedeoma hispida Pursh.
Monarda punctata L.
Plantago Patagonica Jacq.

Chenopodium glaucum L.
Polygonum ramosissimum Mx.
Euphorbia marginata Pursh.
Parietaria Pennsylvanica Muhl.
Cypripedium candidum Muhl.
Liparis Læselii Richard.
Leucocrinum montanum Nutt.
Streptopus roseus Mx.
Vilfa cuspidata Torr.

(C.)

SPECIES NOT BEFORE REPORTED.

Aconitum Noveboracense, Gr.

Banks of Chenango river, Oxford, Chenango county. July. F. V. Coville. The plant doubtfully referred to *A. Napellus*, Twenty-seventh Report, p. 89, belongs to this species, but in it as well as in the Chenango specimen, the racemes are somewhat hairy, contrary to the requirements of the description of the species.

Hieracium præaltum, Vill.

Light sandy soil, near Harrisville, Lewis county. Also, along the road between Great Bend and Le Rayville, Jefferson county. July. This is an introduced species, but it is apparently well established in the localities mentioned. In the Synoptical Flora of North America it is said to grow near Carthage and Evans Mills, but I failed to find it in these localities. It is said in *Science* to have spread extensively in St. Lawrence county, where, in one place, it had taken complete possession of a thirty-acre field and had received the local name "king devil," in allusion to its character as a noxious weed.

Lactuca integrifolia, Bigel.

Cornwall, Orange county. This plant occurs in many parts of the State, but it has been considered a variety of *Lactuca Canadensis*, and as such has been recorded. But in the Synoptical Flora it has been raised to specific rank and it is now recorded as a species.

Penstemon lævigatus, Soland.

Near the canal, two miles west of Rome. June. Probably introduced from the west.

Lycopus sessilifolius, Gr.

Riverhead, Long Island. Formerly regarded as a variety of *L. Europæus*, but now raised to specific rank.

Physalis Peruviana, L.

Manor, Long Island. August. Spontaneous in gardens.

Quercus heterophylla, Mx.

Tottenville, Staten Island. A. Hollick.

Quercus Rudkini, Britton.

With the preceding. Hollick. The observations of Mr. Hollick upon these two oaks and their environment on Staten Island lead him to the conclusion that they are probably hybrid forms.

Sparganium affine, Schn.

Adirondack mountains, North Elba, Lake Sanford, etc. In the Manual this stands as a variety of *S. simplex*, but it is probably a good species. The dwarf terrestrial form was found at Edmonds Ponds and referred to *S. simplex* as a variety in the Thirty-fourth Report, p. 55.

Setaria verticillata, Bv.

Along the railroad near Lansingburgh. E. C. Howe. Introduced from Europe and very rare in this State.

Apera spica-venti, Bv.

Lansingburgh. Howe. This is *Agrostis spica-venti* L. It also has been introduced from Europe and is not common.

Equisetum litorale, Kuhl.

Oneida lake, near the mouth of Fish creek. Coville.

Lepiota augustana, Britz.

Groves or borders of woods. Meadowdale, Albany county. July. This scarcely differs from *L. cristata* except in the shape of the spores, and it has generally been referred to that species.

Tricholoma imbricatum, Fr.

In groves of spruce and balsam trees, *Abies nigra* and *Abies balsamea*. North Elba, Essex county. Sept. Edible.

Tricholoma subacutum, n. sp.

[Plate 1. Figs. 1-5].

Pileus at first ovate or broadly conical, then convex and subacutely umbonate, dry, silky and obscurely virgate with minute innate fibrils, whitish tinged with smoky-brown or bluish-gray, darker on the umbo, flesh white, taste acrid or peppery; lamellæ rather close, slightly

adnexed, white ; stem equal, stuffed or hollow, silky-fibrillose, white ; spores broadly elliptical or subglobose, .00025 to .0003 in. long, .0002 to .00025 broad.

Pileus 1.5 to 3 in. broad ; stem 2 to 4 in. long, 3-6 lines thick.

Woods and groves. North Elba. Sept.

The species is perhaps too closely related to *T. virgatum*, but it is separable by its prominent subacute umbo, paler pileus, hollow stem and hot or peppery taste. The cuticle is separable from the pileus.

Tricholoma silvaticum, n. sp.

[Plate 2. Figs. 16-19.]

Pileus convex or nearly plane, dry, glabrous, subumbonate, whitish ; lamellæ broad, ventricose, subdistant, adnexed, white ; stem subequal, solid, white ; spores rather large, elliptical, .00045 to .0005 in. long, .0003 broad.

Pileus 1 to 1.5 in. broad ; stem 1 to 2 in. long, 2 to 4 lines thick. Mossy ground in woods. North Elba. Sept. The whole plant is white and is related to *T. leucocephalum*, from which it is separated by its subdistant lamellæ, somewhat umbonate pileus and by the absence of any farinaceous odor. From *T. inamœnum* it is distinguished by the absence of odor and stem not radicated.

Tricholoma nobile, n. sp.

Pileus fleshy, convex or nearly plane, dry, minutely punctate or squamulose with innate fibrils, whitish or slightly tinged with yellow, flesh white, taste unpleasant, lamellæ broad, rather close, rounded behind and slightly adnexed, white, slowly changing to pale-yellow where wounded ; stem equal, solid, slightly floccose-pruinose, whitish ; spores minute, subglobose, .00016 to .0002 in. broad.

Pileus 2 to 4 in. broad ; stem 1.5 to 2.5 in. long, 4 to 8 lines thick.

Woods. North Elba. Sept.

The plant is closely related to *T. album*, for which it might easily be mistaken, but its habit is more clearly that of other species of *Tricholoma*, and it may be distinguished by the minute though rather obscure squamules, the insertion of the lamellæ and the subglobose spores. Its taste is very unpleasant and leaves a burning sensation in the mouth and throat for a long time.

Tricholoma brevipes, Bull.

Menands, Albany county. Oct. A small form but apparently not distinct.

Tricholoma microcephalum, Karst.

Grassy ground in meadows and pastures. North Elba. Sept.

The specimens have the colors of *T. melaleucum*, but the spores agree better with those of *T. microcephalum*. The fresh plant bears some resemblance to small dark colored forms of *Collybia radicata* or to small *C. fuliginella*. The lamellæ retain their white color in the dried state.

Clitocybe media, n. sp.

[Plate 1. Figs. 9-12.]

Pileus fleshy, convex, becoming plane or slightly depressed, dry, dark grayish-brown, the margin often wavy or irregular, flesh white, taste mild; lamellæ broad, subdistant, adnate or decurrent, whitish, the interspaces somewhat venose; stem equal or but slightly thickened at the base, solid, elastic, not polished, colored like or a little paler than the pileus; spores elliptical, .0003 in. long, .0002 broad.

Pileus 2 to 4 in. broad; stem 1 to 2 in. long, 4 to 8 lines thick.

Mossy ground in deep woods. North Elba. Sept.

This species is intermediate between *C. nebularis* and *C. clavipes*. In its general appearance, and in the character of the pileus and stem, it resembles *C. nubularis*, but in the character of the more distant lamellæ and in the size of the spores it is nearer *C. clavipes*, of which it might perhaps be regarded as a variety. Two forms are distinguishable. In one the lamellæ are more distant, slightly rounded behind, and adnate or abruptly terminated, in the other they are closer and more distinctly decurrent. The plant is edible. *C. clavipes* is said to be inedible on account of its spongy substance.

Clitocybe gallinacea, Scop.

Woods. North Elba. Sept. Both the stem and the pileus appear as if pruinose or slightly mealy. The taste is bitter and unpleasant.

Clitocybe tumulosa, Kalchb.

Groves of spruce and balsam. North Elba. Sept. Densely caespitose. Edible.

Clitocybe angustissima, Lasch.

Low wet ground in woods. North Elba. Sept.

Clitocybe subditopoda, n. sp.

Pileus thin, convex or nearly plane, umbilicate, hygrophanous, grayish-brown and striate on the margin when moist, paler when dry, flesh concolorous, odor and taste farinaceous; lamellæ broad, close, adnate, whitish or pale cinereous; stem equal, glabrous, hollow, colored

like the pileus; spores elliptical, .0002 to .00025 in. long, .00012 to .00016 broad.

Pileus 6 to 12 lines broad; stem 1 to 2 in. long, about 1 line thick.

Mossy ground in woods. North Elba. Sept.

I have separated this form *C. ditopoda* because of the striate margin of the pileus, paler lamellæ and longer elliptical spores.

Collybia butyracea, Bull.

Common in groves of spruce and balsam trees. North Elba. Sept.

Collybia acervata, Fr.

Woods. North Elba. Sept. *C. simillima* Pk. is doubtless a mere form of this species. *C. spinulifer* Pk. differs in the spinules of the lamellæ.

Collybia ignobilis, Karst.

Mossy ground in balsam groves. North Elba. Sept.

Omphalia striæpileus, Fr.

Groves of spruce and balsam. North Elba. Sept.

The specimens differ from the description of the species only in color. They are dingy whitish when moist, white when dry.

Omphalia tubæformis, n. sp.

Pileus submembranous, glabrous, deeply umbilicate, grayish, the margin decurved or spreading, lamellæ distant, deeply decurrent, white, sometimes branched, with venose interspaces; stem short, equal or tapering downward, hollow, subpruinose, blackish-brown toward the base; spores elliptical, .0002 in. long.

Pileus 8 to 12 lines broad; stem 6 to 10 lines long.

Dead bark of willow. Menands. June.

Pleurotus mitis, Pers.

Prostrate trunks of balsam, *Abies balsamea*. North Elba. Sept.

Hebeloma firmum, Pers.

Woods. North Elba. Sept.

Naucoria scirpicola, n. sp.

[Plate 2. Figs. 6-10.]

Pileus membranous, at first hemispherical and tomentose, then convex or nearly plane, glabrous or adorned with a few floccose, superficial scales, widely striate on the margin, tawny or subochraceous, subtomentose when dry; lamellæ subdistant, slightly adnexed,

colored nearly like the pileus; stem slender flocculose toward the base, white, attached to the matrix by white tomentose filaments; spores elliptical, .0004 to .0005 in. long, .0003 broad.

Pileus 6 to 10 lines broad; stem 8 to 12 lines long, .5 lines thick.

Base of stems of *Scirpus validus*. Patchogue. Aug.

Easily known by the striate margin and the white tomentum of the young pileus. It belongs to the first section of the tribe Lepidoti in the Friesian arrangement.

***Galera rufipes*, n. sp.**

[Plate 2. Figs. 11-15.]

Pileus campanulate or convex, hygrophanous, reddish-tawny and striatulate when moist, whitened on the margin by the remains of the white fibrillose veil, pale ochraceous when dry; lamellæ broad, subdistant, emarginate, yellowish or subochraceous, slightly crenulate on the whitish edge; stem slender, hollow, slightly fibrillose below, pruinose at the apex, reddish-brown; spores subochraceous, .00025 to .0003 in. long, .00016 to .0002 broad.

Pileus 4 to 6 lines broad; stem about 1 in. long, .5 line thick.

Mossy ground in woods. North Elba. Sept.

***Psathyra silvatica*, n. sp.**

Pileus membranous, campanulate, glabrous, viscid, hygrophanous, dark-brown and striatulate when moist, grayish-brown when dry; lamellæ broad, ascending, subdistant, ferruginous-brown with a white edge; stem slender, subflexuous, hollow, brown; spores brown, .0004 in. long, .00025 broad.

Pileus 4 to 5 lines broad; stem 1 to 2 in. long, .5 line thick.

Mossy ground in woods. North Elba. Sept.

***Cortinarius fulgens*, Fr.**

Mixed woods. North Elba. Sept.

This is a showy fungus. The specimens were wholly yellow except the center of the pileus, which was marked with ferruginous or tawny stains and spots.

***Cortinarius (Phlegmacium) lanatipes*, n. sp.**

Pileus fleshy, broadly convex or nearly plane, viscose, grayish, often tinged with yellow, becoming yellowish or subfulvous and virgate with innate tawny fibrils when old, flesh whitish; lamellæ narrow, close, adnexed, pale violaceous when young; stem equal or tapering upward, solid, bulbous, subannulate, loosely fibrillose tomentose below, silky

above the annulus, white, veil white; spores elliptical, .0003 in. long, .0002 broad.

Pileus 1 to 3 in. broad; stem 1 to 2 in. long, 3 to 5 lines thick.

Groves of spruce. North Elba. Sept.

The pale pileus becoming virgate and more highly colored with age and the loose, woolly covering of the stem are the distinguishing features of this species. The bulb is distinct, but scarcely marginate.

Cortinarius (Inoloma) canescens, n. sp.

Pileus fleshy, subcampanulate or convex, obtuse or somewhat umbonate, silky or squamulose with innate grayish fibrils, whitish-gray when young, tinged with yellow or rufous hues when old; lamellæ thin, subdistant, rounded behind and adnexed, pallid when young, stem equal or tapering upward from a large, soft, spongy clavate-thickened base, solid, white, peronate and subannulate by the silky-fibrillose white veil, spores elliptical, uninucleate, .0004 to .0005 in. long, .00025 to .0003 broad.

Pileus 2 to 3 in. broad; stem 2 to 4 in. long, 4 to 6 lines thick.

Abundant and gregarious in groves of spruce. North Elba. Sept.

The species is distinct from its allies by the absence of violaceous hues on the young lamellæ and by its large, spongy bulbous base of the stem. There is no marked odor, but the taste is unpleasant.

Cortinarius (Inoloma) erraticus, n. sp.

Pileus fleshy, firm, subcampanulate or convex, obtuse, dry, silky or obscurely squamose with innate fibrils, canescent, often becoming grayish-tawny, flesh dingy-white; lamellæ subdistant, adnexed, pale-tawny, becoming darker with age; stem firm, solid, thickened toward the base, white and tomentose below, violaceous above; veil violaceous, often forming an imperfect annulus and sometimes remaining in fragments or floccose scales on the margin of the pileus; spores elliptical, uninucleate, .0003 in. long, .0002 broad.

Pileus 2 to 3 in. broad; stem 2.5 to 4 in. long, 3 to 6 lines thick.

Groves of balsam. North Elba. Sept.

This species resembles the preceding one, but is at once distinguished from it by the violaceous color of the veil and the smaller spores.

Cortinarius (Inoloma) cæspitosus, n. sp.

Pileus fleshy, firm, convex, often irregular from its crowded mode of growth, silky-fibrillose on the margin, pale-yellow or buff color, often a little darker on the disk, flesh white; lamellæ thin, close, rounded behind and adnexed, whitish when young, then subochra-

ceous; stem nearly equal, solid, subbulbous, caespitose, silky-fibrillose, subannulate, floccose-villose at the apex, white, spores, elliptical, .0003 to .0004 in. long, .00016 to .0002 broad.

Pileus 2 to 4 in. broad; stem 1 to 3 in. long, 4 to 6 lines thick.

Mossy ground in open places. Catskill mountains. Sept.

The caespitose mode of growth, yellowish pileus, pale lamellæ and white flesh and stem distinguish this species.

Cortinarius (Dermocybe) lutescens, n. sp.

Pileus broadly convex or nearly plane, unpolished, innately fibrillose, squamulose on the disk, dingy-yellow, often with a greenish tint and sometimes marked with reddish or brownish spots, flesh whitish; lamellæ rather broad, close, adnexed, subconcolorous when young, tawny-cinnamon when old; stem equal, firm, silky fibrillose, subannulate from the remains of the veil, colored like the pileus; spores broadly elliptical or subglobose, .00025 to .0003 in. long, .0002 to .00025 broad.

Pileus 1 to 3 in. broad, stem 1 to 1.5 in. long, 2 to 3 lines thick.

Mossy ground in woods. North Elba. Sept.

The pileus is somewhat moist in wet weather which makes the species ambiguous between *Dermocybe* and *Telamonia*. The fibrils of the pileus indicate a *Dermocybe*.

Cortinarius (Telamonia) adustus, n. sp.

Pileus broadly campanulate or convex, obtuse, hygrophanous, bay-brown when moist, sometimes canescent on the margin, paler when dry, but smoky-brown with age and generally rimose-squamose, flesh yellowish-gray; lamellæ rather thick, distant, subfree, purplish-brown; stem equal, stuffed or hollow, fibrillose, brownish with a white mycelioid coating at the base, colored within like the flesh of the pileus; spores elliptical, .0003 to .0004 in. long, .0002 to .00025 in. broad.

Pileus 10 to 18 lines broad; stem 1 to 3 in. long, 3 to 5 lines thick.

Balsam groves. North Elba. Sept.

The plant is sometimes caespitose. The pileus, when old, becomes smoky-brown or blackish and is often chinky or rimose-areolate.

Cortinarius (Hydrocybe) pallidus, n. sp.

Pileus thin, broadly convex or nearly plane, glabrous, hygrophanous, pale alutaceous when moist, buff-yellow when dry, flesh concolorous when moist, whitish when dry; lamellæ thin, rather close, ventricose, pallid; stem equal, rigid, hollow, silky-fibrillose, pallid, becoming brownish toward the base; spores subelliptical, .0003 to .00035 in. long, .0002 to .00025 broad.

Pileus 1 to 1.5 in. broad; stem 1.5 to 3 in. long, 1 to 2 lines thick. Mossy ground in wooded swamps. North Elba. Sept.

Hygrophorus Queletii, Bres.

Groves of larch, balsam and spruce. North Elba. Sept.

This species was very abundant in the locality mentioned. It is commonly gregarious and sometimes caespitose. The viscid pellicle is separable, by which character it is clearly distinct from the allied *H. pudorinus*. When caespitose the stem and pileus are often irregular. It is a fine species, nearly white, but with the pileus most delicately tinted with pale flesh color.

Hygrophorus capreolarius, Kalchb.

Mossy ground in woods. North Elba. Sept.

Although this fungus was regarded by Kalchbrenner as a variety of *H. erubescens*, it appears to me to be a good and distinct species. Many specimens were found in the woods of North Elba but they were constant in their characters. The colors are darker than in *H. erubescens*, and the stem, in the American plant at least, is destitute of red dots or points at the top. No specimens of the true *H. erubescens* were found, although in Hungary the two plants grow in the same places.

Hygrophorus hypothejus, Fr.

Woods. North Elba. Sept.

Hygrophorus fuscoalbus, Fr.

Groves of spruce and balsam. North Elba. Sept. Our specimens are smaller than the European plant, but in other respects they appear to be the same.

Lactarius atroviridis, n. sp.

Pileus fleshy, firm, centrally depressed, scabrous-hairy, sometimes rimose-areolate, dark-green, flesh whitish, milk white, taste acrid; lamellæ rather close, adnate or decurrent, whitish, sometimes spotted, or green on the edge; stem equal, short, hollow, colored like, but often paler than the pileus, spotted; spores yellowish-white, subglobose, rough, .0003 in. in diameter.

Pileus 2.5 to 4 in. broad; stem 1 to 2 in. long, 6 to 10 lines thick.

Borders of woods. Sandlake. Aug.

The color of the pileus is a dark olive green, by which and by its dryness the species may be distinguished from *L. sordidus*. The same species occurs in North Carolina, where it was collected by Rev. C. J. Curtis.

Lactarius quietus, Fr.

Low woods. North Elba. Sept.

Russula purpurina, Q. & S.

Mossy ground in woods of balsam. North Elba, near Lake Placid. This is a beautiful and very distinct species, easily known by its red stem, mild taste and white spores.

Cantharellus rosellus, n. sp.

[Plate 1. Figs. 6-8.]

Pileus thin, infundibuliform, regular, glabrous, pale pinkish-red, flesh white; lamellæ narrow, close, dichotomous, deeply decurrent, whitish, tinged with pink; stem equal, slender, solid, subglabrous, often flexuous, colored like the pileus; spores minute, broadly elliptical, .00014 in. long, .0001 broad.

Pileus 4 to 8 lines broad; stem about 1 in. long, scarcely 1 line thick. Mossy ground in groves of balsam. North Elba. Sept. This small species belongs to the section Agaricoides, and is apparently closely allied to *C. albidus*, from which its smaller size and different color distinguish it. The pileus is sometimes deeply umbilicate

Marasmius peronatus, Fr.

Thin woods. North Elba. Sept.

Lenzites heteromorpha, Fr.

Stumps of spruce. North Elba. Sept.

In the Thirtieth Report I expressed the opinion that *Lenzites Cookei*, *Dædalea confragosa*, *Trametes rubescens*, etc., were all forms of one species. In *Icones Selectæ Hymenomycetum* Professor Fries says that *L. heteromorpha* exhibits three forms, one of which belongs to *Lenzites*, another to *Dædalea* and another to *Trametes*, thus showing too great an affinity between these genera. The form here noted belongs to *Dædalea*. The lenzitoid form, which is taken as the type of the species, was not detected by me.

Boletus floccopus, Vahl.

Woods. Selkirk, Albany county. Aug.

The forms which I have referred to this species scarcely differ from *B. strobilaceus*, except in having the tubes depressed around the stem.

Boletus hirtellus, Pk. ms.

Sandy soil under pine trees. Rensselaer lake, Albany county. Oct.

Boletus subvelutipes, *Pk. ms.*

Woods. Caroga and Catskill mountains. July.

Polyporus piceinus, *n. sp.*

Pileus 1 to 2 inches broad, thin subcorky, sessile, often conerescent and imbricated, sometimes resupinate or effuso-reflexed, tomentose, concentrically sulcate and adorned with intervening elevated tomentose lines or narrow zones, tawny-brown or subspadiceous, the thin margin at first golden-yellow, soon tawny, then concolorous; hymenium plane or concave, tawny-cinnamon, the pores minute, subrotund, long, the dissepiments thin, but entire; spores minute, subglobose, .00016 in. broad.

Dead trunks and bark of spruce, *Picea nigra*. Sandlake and Adirondack mountains. July to October.

This is a common species in regions where the spruce abounds, yet it does not appear to have been described, nor does it appear to grow on the trunk or bark of any other tree. The pileus often grows as if attached by the vertex, and thus resembles in form the pileus of *Hymenochaete rubiginosa*, or that of *Trametes mollis*. In color it resembles *Lenzites sepiaria* and *Trametes Pini*, but it is generally a little paler or more tawny. Sometimes the fungus appears to revive the second year, and the pores are then obscurely stratose. This, with the peculiar elevated lines of tomentum on the pileus, suggests a resemblance to *Fomes pectinatus*, but our plant would belong rather to the genus *Polystictus*, if the more recent genera into which the old genus *Polyporus* has been subdivided should be adopted. In the beginning a minute orbicular tuft of golden velvety hairs or fibres appear. As this tuft enlarges pores are formed in the center just as in *Polyporus (Polystictus) abietinus*, which sometimes accompanies it. On the under side of prostrate trunks the fungus remains resupinate, or has but a narrow reflexed margin, but in vertical situations a pileus is formed.

Polyporus aureonitens, *Patouillard in lit.*

Pileus 6 to 18 lines broad, rather thick, corky, sessile, variously conerescent and imbricated, minutely velvety-pubescent when young, soon glabrous, radiately fibrous-striate, the young plant and growing margin at first sulphur-yellow, then golden-tawny, finally tawny-ferruginous, generally concentrically marked with darker lines or narrow zones, somewhat shining, substance tawny; pores minute, subrotund, short, ferruginous with a silvery lustre; spores whitish, or very pale yellowish, elliptical-naviculoid, .0002 in. long, .00016 broad.

Trunks of birches, alders and maple, *Acer spicatum*. Sandlake, Catskill and Adirondack mountains. Aug. and Sept.

Related to *P. radiatus*, and like it belonging to the genus *Polystictus* of modern classification. It is distinguished by its paler color, often lineate-zonate pileus and paler spores.

***Polyporus variiformis*, n. sp.**

Pileus 4 to 10 lines broad, coriaceous or subcorky, nearly plane, somewhat strigose-tomentose, tawny-rufescent, subzonate, often nodulose, sometimes wholly resupinate, substance white; pores rather large, subrotund, angular or even flexuous, white, in oblique situations gaping or lacerated.

Var. *nodulosus*. Pilei very small, narrowly reflexed, forming small nodules.

Var. *resupinatus*. Wholly resupinate or with a narrowly reflexed continuous margin.

Var. *interruptus*. Interruptedly resupinate or anastomosingly creeping, marginless.

Prostrate trunks of spruce, *Picea nigra*. Adirondack mountains, North Elba and Cascadeville. June and Sept.

This species is very variable and seems ambiguous between *Polystictus*, *Dædalea* and *Trametes*. It appears to live through the winter and revive again the next season. It is almost corky in texture. The pores are at first pure white, but they become whitish or pallid with age.

***Polyporus rhodellus*, Fr.**

Prostrate trunks of hemlock, *Abies Canadensis*. Adirondack mountains. Aug.

This and the two following species belong to the genus *Poria* of Persoon.

***Polyporus marginellus*, n. sp.**

Resupinate, effused, forming extensive patches, 1 to 3 lines thick; subiculum distinct, firm, subcinnamon, the extreme growing margin white, becoming dark-ferruginous with age; pores at first short, sunk in the tomentum of the subiculum, then longer, minute, rotund, often oblique, brownish-ferruginous, glaucous within, the dissepiments thick, obtuse.

Dead bark and decorticated trunks of spruce, *Abies nigra*. North Elba. Sept.

Remarkable for and very distinct by the narrow downy white margin that borders the growing plant.

Polyporus sulphurellus, n. sp.

Resupinate, effused, very thin, following the inequalities of the matrix; subiculum and margin downy, white; pores very short, minute, rotund, very pale-yellow, often with a slight salmon tint, the issepiments obtuse.

Dead bark of poplar. Catskill mountains. Sept.

Trametes Pini, Fr.

Railroad ties. Fishkill. Pine trees. Eastport, Long Island. Aug.

Merulius aureus, Fr.

Decaying wood of balsam, *Abies balsamea*. North Elba. Sept.

In drying, the specimens become orange colored.

Merulius molluscus, Fr.

Bark and decorticated wood of spruce. Averyville, Essex county. Sept.

Phlebia vaga, Fr.

Prostrate trunks of acerose trees. North Elba. Sept.

Phlebia acerina, n. sp.

Resupinate, effused, irregular, subglabrous beneath, the margin entire; hymenium dingy cream color, becoming darker with age, the folds irregular, obtuse, dentate, subporous.

Wood and bark of maple, *Acer saccharinum*. Mechanicville. July.

Closely related to *P. vaga* from which it appears to be distinct by its entire nearly glabrous margin and less tuberculose or papillate hymenium.

Odontia Pruni, Lasch.

Dead bark of wild red cherry, *Prunus Pennsylvanica*. Adirondack mountains. Sept.

Odontia fusca, C. & E.

Decaying wood of spruce. Averyville. Sept.

Thelephora scoparia, n. sp.

[Plate 2. Figs. 20, 21.]

Incrusting small plants, mosses, etc., here and there emitting fascicles of branches, united below, subterete, acuminate or fimbriately incised, at first pale or whitish, soon ferruginous brown; hymenium even, pruinose-pubescent; spores angular, rough, colored, .0003 to .0004 in. long.

Bethlehem and Selkirk. Aug.

This has the habit and color of *T. laciniata*, but it forms tufts of branches rather than pilei and the hymenium is even. Sometimes it overtops the stems which it incrusts and then it appears stipitate and branched above.

Corticium sulphureum, Fr.

Prostrate trunks of balsam. North Elba. Sept.

Corticium rhodellum, n. sp.

Thin, membranous, adnate; subiculum and fimbriate margin white or whitish; hymenium slightly pruinose, rosy-incarnate, bearing metuloids .0016 to .002 in. long, .0004 to .00045 broad; spores elliptical, naviculoid, .00016 to .0002 in. long.

Decaying wood. Lyndonville, Orleans county. *C. E. Fairman*, M. D. Specimens have also been found growing on the bark of poplar and communicated to me by *Mr. T. G. Gentry* of Philadelphia.

The species differs from *C. carneum* B. & C. in its brighter color and in the even, not rimose, hymenium. From *C. roseum* Pers. it is distinct by the presence of metuloids and its smaller spores. It belongs to the genus *Peniophora* of Cooke.

Corticium subincarnatum, n. sp.

Effused, thin, pale-yellow, soon subincarnate, even, pruinose-pulverulent, the broad scarcely determinate margin sulphur yellow; spores elliptical, minute, .00016 in. long, .00008 broad.

Decorticated wood of spruce. North Elba. Sept.

Hymenochaete abnormis, n. sp.

[Plate 1. Figs. 13-16.]

Pileus effuso-reflexed, coriaceous or subcorky, about six lines broad, generally imbricated and wavy or complicate, tomentose, obscurely zonate, sometimes tuberculate or uneven, blackish; hymenium cinereous, pruinose, setulose with pale-ferruginous blunt setæ; spores oblong, colorless, .0004 to .0005 in. long, .0002 to .00025 broad.

Decaying wood of spruce in wet places. Adirondack mountains. Sept.

Remarkable for the colored but unusually blunt and subcylindrical setæ of the hymenium. These are sometimes paler above and sometimes slightly rough.

Pistillaria viticola, n. sp.

[Plate 2. Figs. 25-27.]

Club ovoid or obovoid, obtuse, glabrous, white, about equal to or only half as long as the stem; stem cylindrical or slightly tapering upward, glabrous, .5 to .75 line long, white; spores elliptical, .00025 to .0003 in. long.

Dead stems of grape vine, *Vitis cestivalis*. Ellenville, Ulster county.

Pistillaria alnicola, n. sp.

[Plate 2. Figs. 22-24.]

Club ovate or oblong, obtuse, sometimes compressed or irregular, one to two lines high, sessile or with a very short stem-like base, erumpent, glabrous, varying in color from brownish-ochre to bay-red, whitish and spongy within; basidia with four sterigmata; spores ovate, pointed at one end, .0004 to .0006 in. long, .00025 to .0003 broad.

Dead branches of alder, *Alnus incana*. Adirondack mountains. Cascadeville. Sept.

Mitremyces lutescens, Schw.

Shaded banks. Ellenville. July. This is considered by Dr. G. Massee to be synonymous with *Calostoma cinnabarina*, Desf.

Geaster fornicatus, Fr.

Gouverneur, St. Lawrence county. Mrs. E. C. Anthony.

The specimens have numerous rays and belong to var. *multifidus*. Mrs. A. also sends from the same locality a specimen of *G. mammosus*, Chev.

Phyllosticta Negundinis, Sacc. & Speg.

Living leaves of box elder, *Negundo aceroides*. Patchogue. Aug.

Phyllosticta serotina, Oke.

Living leaves of wild black cherry, *Prunus serotina*. Manor, Long Island. Aug. The wild black cherry is very common in the eastern part of Long Island, and its leaves are often spotted by this fungus. Its branches also are frequently attacked by *Plowrightia morbosa*, the fungus that causes the "black knot," although in the northern and eastern parts of the State this tree is almost entirely exempt from the attacks of this fungus.

Phyllosticta Hibisci, n. sp.

Spots suborbicular, whitish or reddish-gray, with a narrow brown border, 2 to 4 lines broad; perithecia minute, .004 in. broad, epiphyllous, black; spores oblong, .0003 to .0004 in. long, .00012 to .00015 broad, usually with one or two nuclei; sporophores simple or branched, .0004 to .0008 in. long.

Living leaves of swamp rose mallow, *Hibiscus moscheutos*. Eastport and Patchogue. Aug.

Phoma Libertiana, Speg. & Roum.

Corticated branches of hemlock, *Abies Canadensis*. Sandlake. Aug.

Diplodia Dulcamaræ, Fckl.

Dead stems of bittersweet, *Solanum dulcamara*. Sandlake. Aug.

The spores are at first simple, and in this condition the fungus might be referred to the genus *Sphæropsis*.

Hendersonia Mali, Thum.

Living leaves of apple tree. Phœnicia, Ulster county. Sept. In our specimens the perithecia are rather smaller than in the type.

Septoria Trichostematis, n. sp.

Spots mostly large, but one or two on a leaf, brownish-gray, generally with a broad purplish margin; perithecia epiphyllous, minute, .003 to .004 in. broad, black; spores bacillary, slender, straight or curved, .0012 to .0016 in. long.

Living leaves of blue curls, *Trichostema dichotomum*. Manor. Aug.

Sacidium lignarium, n. sp.

Perithecia numerous, scattered or aggregated, thin, membranous, clypeate, astomous, quadrangular or pentangular, black, easily separable from the matrix; spores minute, oblong, colorless or faintly colored, .00016 in. long, .00008 broad.

Bottom of a basswood barrel in a cellar. Flatbush, Long Island. April. Rev. J. L. Zabriskie.

Aposphæria aranea, n. sp.

Perithecia scattered or gregarious, superficial, astomous, subglobose, submembranous, rupturing irregularly, black, involved in and generally seated on pale webby filaments; spores .00012 to .00016 in. long, about .0001 broad.

With the preceding. Zabriskie.

Vermicularia truncata, Schw.

Old bean pods. Menands. Oct.

Vermicularia Wallrothii, Sacc.

Kind of squash, *Cucurbita melopepo*. Menands. Sept.

Dinemasporium hispidulum, Sacc.

Dead wood of *Viburnum dentatum*. West Albany. May.

Glœosporium lagenarium, Sacc. & Roum.

Rind of squash, *Cucurbita melopepo*. Menands. Nov.

Glœosporium Physalosporæ, Car.

Ripening grapes. Menands. Oct.

Glœosporium irregulare, n. sp.

Spots large, irregular, generally but one or two on a leaflet, brown or reddish-brown ; acervuli numerous, hypophyllous, minute ; spores elliptical, obtuse, .0003 to .0004 in. long, .00016 to .0002 broad, oozing out and forming minute subglobose pale or whitish masses.

Living leaves of ash trees, *Fraxinus Americana*. Menands. June.

In the locality mentioned, this fungus has appeared on several trees two years in succession. In some instances nearly all the leaves are affected by it, and in consequence the foliage appears badly blighted and injured as if by fire.

Melanconium Tiliæ, n. sp.

Heaps subcutaneous, minute, scarcely elevating the epidermis ; spores ovate or subelliptical, involved in mucus, black, .0009 to .0011 in. long, .0007 to .0008 broad, oozing out and forming small black dot-like stains on the matrix.

Dead branches of basswood, *Tilia Americana*. Mechanicville. July.

This species may be easily recognized by its minute heaps, small spore stains, and by having its spores involved in mucus.

Melanconium foliicolum, n. sp.

Spots orbicular, brown or reddish-brown, surrounded by a narrow darker border ; heaps hypophyllous, minute, black ; spores elliptical, slightly colored, .0004 to .0005 in. long, about .0003 broad.

Dead spots on living leaves of sassafras. Manor. Aug.

Ustilago Osmundæ, Pk.

Living fronds of royal fern, *Osmunda regalis*. Knox, Albany county. July.

The fungus attacks the apical part of sterile fronds and thickens and distorts the frond tissues. The fresh specimens show that it is scarcely a good *Ustilago*, inasmuch as the spores appear to be borne at the surface, and not to be deeply seated as in genuine species. Its true affinity is not yet clear. The margin of the affected part of the frond is sometimes whitened by minute fungous filaments. The spores are globose, reddish-brown, slightly rough, .0004 to .0005 in. in diameter. Probably it is an aberrant *Uredo*.

Synchytrium aureum, Schrœt.

Living leaves and petioles of strawberry, *Fragaria Virginiana*. Sandlake. June.

Peronospora sordida, Berk.

Living leaves of figwort, *Scrophularia nodosa* v. *Marilandica*. Knowersville, Albany county. July.

***Monilia effusa*, n. sp.**

Patches at first small, soon confluent and widely effused, thin, pulverulent, pale tawny or ochraceous; hyphæ hyaline, septate, spores catenulate, limoniform, apiculate at one or both ends, .0006 to .0007 in. long, .0004 to .0005 broad.

Decaying wood. Jayville, St. Lawrence county. July.

From *M. aurea* it differs in its smaller spores and more effused mode of growth.

***Monilia aurantiaca*, Peck & Sacc.**

Tufts pulvinate, superficial, rather compact, soon fragile, velvety-pulveraceous, 1 to 6 lines in diameter, sometimes confluent, orange-salmon color; hyphæ radiating, .0004 to .0005 in. broad, irregularly branched, septate as well as the branches, the joints at length separating; spores heteromorphous, at first globose or elliptical, .0004 to .0005 in. broad, or .0007 in. long, .0004 broad, then sublimoniform, forming rather long chains, .0004 to .0005 in. long, .0003 to .00035 broad, the chains often branched.

Dead bark of *Ailanthus glandulosus*. Manor, L. I. Aug.

Related to *M. aureofulva* and *M. sitophila*, but distinct in the color of the tufts and in the form and size of the spores.

***Rhopalomyces Cucurbitarum*, B. & R.**

Flowers and fruit of squash. Menands. Aug.

***Aspergillus fimetarius*, n. sp.**

White; sterile hyphæ creeping, fertile erect, simple, septate, slightly enlarged at the apex; basidia oblong or subcylindrical, pointed at the apex, .0005 to .0006 in. long; spores globose, .00016 to .0002 in. long.

Excrement of deer. Adirondack mountains. July.

The species is very closely allied to *A. candidus*, but is distinguished by its septate hyphæ, larger spores and different habitat.

***Rhinotrichum ramosissimum*, B. & C.**

Decaying oak wood and bark; also on maple wood. Menands and Selkirk. Aug.

Our specimens agree with the description of *R. Curtisii* in the character of the terminal joints of the hyphæ, but in color and spore character they correspond better with the description of *R. ramosissimum*.

***Virgaria hydnicola*, n. sp.**

Hyphæ minute, forked or ternately divided, brownish, the ramuli subulate, slightly divergent; spores globose, minute, .0001 to .00015 in. broad.

On a white resupinate Hydnum to which it imparts a smoky brown color. North Elba. Sept.

Fusicladium fasciculatum, C. & E.

Living leaves of ipecac spurge, *Euphorbia Ipecacuanha*. Manor. Aug.

Septonema breviusculum, B. & C.

Bark of living maple, *Acer saccharinum*. Menands and Knowersville. May and June. This fungus forms a thin black crust over the bark.

Cercospora Epilobii, Schnl.

Living leaves of willow herb, *Epilobium angustifolium*. Harrisville and Jayville. July.

Cercospora Resedæ, Fckl.

Living or languishing leaves of mignonette, *Reseda odorata*. Menands. Aug. and Sept.

On living leaves the spots are whitish or grayish, but on dead leaves they often become blackish.

Cercospora rhuina, C. & E.

Living leaves of dwarf sumac, *Rhus copallina*. Manor. Aug.

Our specimens differ from the type in having the spots blackish and may be designated as variety *nigromaculans*.

Sporocybe cellare, n. sp.

Stems .04 to .07 in. long, cylindrical or tapering upward from an enlarged or subbulbous base, straight, blackish-brown, composed of densely compacted filaments except on the surface, capitulum broader than the stem, tawny-brown; spores very numerous, globose, colored, .0002 to .00025 in. broad.

On a barrel in a cellar. Flatbush. March, *Zabriskie*.

It differs from *S. bulbosa* Schw. in the character of the spores.

Helicomycetes roseus, Lk.

Dead bark of poplar, *Populus tremuloides*. Adirondack mountains. Sept.

Tubercularia fungicola, n. sp.

Tubercles minute, scattered, subglobose, .007 to .014 in. broad, orange colored; spores oblong or subfusiform, hyaline, straight or slightly curved, .0004 to .0006 in. long, .00012 broad.

On old *Hypoxylon coccineum*. Knowersville. May.

Tuberculina persicina, Sacc.

Parasitic on the *Æcidium* of *Clematis Virginiana*. Near Lowville, Lewis county. July.

This is apparently a very rare fungus in this State.

Ombrophila albiceps, n. sp.

[Plate 2. Figs. 1-5.]

Pileus hemispherical or convex, tough, whitish or sometimes with a faint incarnate tinge, 2 to 4 lines broad; stem equal or slightly thickened at the base, tough, stuffed, appearing as if externally coated with gluten in wet weather, pallid or reddish-brown, 4 to 8 lines long, 1 to 1.5 lines thick; asci narrow, cylindrical, paraphysate, 8-spored, .0016 to .002 in. long, .0002 to .00025 broad; spores minute, elliptical, .0002 in. long, .00012 broad.

Decaying wood of deciduous trees. North Elba. Sept.

This is a very distinct species, easily separated from its allies by its peculiar colors and its external resemblance to species of *Leotia*. The central pith of the stem is accurately limited and sometimes in drying the stem becomes hollow.

Peziza scubalonta, C. & G.

Cow dung. North Elba. Sept. In the dried specimens the hymenium sometimes becomes rimose or perforated by contraction.

Peziza hinnulea, B. & Br.

Burnt ground. Menands. Aug.

Calloria acanthostigma, Fr.

Decorticated wood of deciduous trees. Adirondack mountains. Aug.

Valsa coronata, Fr.

Dead bark of maple, *Acer saccharinum*. Catskill mountains. Sept.

Anthostoma turgidum, Nits.

Dead bark of beech, *Fagus ferruginea*. Selkirk. Aug.

Anthostomella limitata, Sacc.

Dead stems and branches of swamp honeysuckle, *Lonicera oblongifolia*. Knox. July.

Nummularia repanda, Fr.

Dead branches and trunks of mountain ash, *Pyrus Americana*. North Elba. Sept.

Externally this species resembles *N. discreta*, but it may be distinguished by its larger size dentate-lacerated margin of the stroma and ovate spores.

Chætosphæria longipila, n. sp.

Perithecia very small, gregarious, black, seated on or involved in a subiculum of very long, slender, webby, cinereous or grayish-brown filaments; asci oblongate, the sporiferous part .0016 in. long, .0005 broad; spores crowded or biseriate, straight, .0004 to .0005 in. long, .0002 to .00025 broad, triseptate, the two intermediate cells colored, the terminal ones hyaline.

Old barrel in a cellar. Flatbush. March. *Zabriskie*.

This is related to *C. phæostroma* and *C. phæostromoides*, but it differs from both in its paler subiculum and shorter straight spores.

Celidium stictarum, Tul.

Receptacles of lungwort lichen, *Sticta pulmonaria*. Catskill and Adirondack mountains, also in Sandlake. The fungus blackens the surface of the apothecia and thus makes the affected ones easily recognizable.

Micrococcus prodigiosus, Cohn.

Stale bread in damp places. Menands. Aug.

(D.)**REMARKS AND OBSERVATIONS.****Proserpinaca pectinacea, Lam.**

Manor, L. I. Aug. In the State Flora, Vol. 1, p. 241, Dr. Torrey admits this plant on the authority of Dr. Douglas, and says that "it will very probably yet be found on Long Island." It was found, with *Ammannia humilis*, growing on the shores of a pond about half a mile Northwest of Manor. It is a very rare species.

Lonicera oblongifolia, Hook.

Tamarack swamp near Knox. Some of the plants in this locality produce united berries, others have them nearly distinct.

Valerianella Woodsiana, Walp. var. patellaria, Gr.

Alluvial meadows along the Chenango river. Oxford. *Coville*.

Solidago nemoralis, Ait.

Elizabethtown, Essex county. A remarkable form with white rays. The general hue of the panicles is creamy yellow.

Rudbeckia hirta, L.

This is already a pestilent weed in some parts of the State. In some meadows it has become as plentiful as the white or ox eye daisy. A double flowered form, probably from Marion, Wayne county, was communicated by Mrs. E. G. Britton.

Coreopsis trichosperma, Mx. var. tenuiloba, Gr.

Near Eastport and Patchogue. Aug. In the Synoptical Flora this variety is attributed to peat bogs in Indiana and Illinois, but either it or a very closely allied form occurs on Long Island. The leaves and their divisions are linear and entire or merely hispidulous-serrulate. The awns of the achenia are variable.

Rhododendron Rhodora, Don.

Sam's Point, Ulster county. July. This locality for one of our rare plants was first made known by the late C. F. Austin.

Polemonium cæruleum, L.

Abundant in alder swamps and bogs in McDonough and Preston, Chenango county. Coville.

Celtis occidentalis, L.

Banks of Black river near Lowville. This is a form having the leaves variegated with pale greenish yellow angular spots or blotches. The blackberry, *Rubus villosus*, and the red raspberry, *Rubus strigosus*, occasionally occur with variegated foliage.

Arceuthobium pusillum, Pk.

Black spruce in Preston, Plymouth and German, Chenango county. Coville.

Betula glandulosa, Mx.

Abundant in a tamarack swamp between Lake Bonaparte and Harrisville. The shrubs are four to six feet high, and by their size the pale lower surface of the leaves and the longer fertile aments they appear to connect with *B. pumila*. But the branches are somewhat glandular dotted and for this reason the plants are referable to *B. glandulosa*.

Sagittaria graminea, Mx.

Abundant about Lake Geneganslet in McDonough. Coville.

Epipactis Helleborine, Crantz, var. viridens, Irm.

This rare orchidaceous plant which was discovered near Syracuse a few years ago and subsequently near Buffalo, has now been detected in a third locality near Otisco, Onondaga county, by Dr. W. W. Munson.

Trillium grandiflorum, Salsb., var. variegatum, Pk.

Additional specimens sent by Mrs. Goodrich show a great variation in the coloring of the flowers. In one specimen two petals had a narrow green dash in the center, the other one was wholly white. In

another specimen the central green line is replaced by a row of green spots. Two specimens have the petals almost wholly green, the extreme apex and adjacent margins only being white. Between these extremes all degrees of variation in the extent of the green coloring exist. The plants grew in abundance, about a hundred specimens having been found. Mrs. G. adds in an accompanying note that two specimens were found in which not only the petals but also the sepals were wholly white.

***Eleocharis quadrangulata*, R. Br.**

Lake Neahtowantah, near Fulton, Oswego county. *Coville*.

***Paspalum setaceum*, Mx.**

A form was found near Manor, often having two spikes from the upper sheath.

***Equisetum variegatum*, Schl.**

Greene, Chenango county, *Coville*. Also near Lerayville, Jefferson county.

***Equisetum palustre*, L.**

Banks of the railroad near Lake Bonaparte, Lewis county. Sometimes two or three fertile stems spring from the same root.

***Tricholoma transmutans*, Pk.**

Common in spruce and balsam groves in North Elba, where it is associated with *T. imbricatum* and *T. vaccinum*, which it resembles in color, and in its farinaceous odor and taste, but from which it is readily distinguished by its viscid pileus. It belongs to the group of which *T. fulvellum*, *T. flavobrunneum* and *T. albrobrunneum* are representatives, and, though closely allied to these species, it is quite distinct from them. It is an edible species.

***Clitopilus Noveboracensis* var. *brevis*, n. var.**

Pileus abundantly rivulose, plane or slightly depressed, pallid or subrufescent and pure white on the margin when moist, wholly white or whitish when dry; lamellæ slightly decurrent; stem short, about one inch long.

Groves of spruce and balsam. North Elba. Sept.

This variety manifests a tendency to grow in lines or in arcs of circles. It is often somewhat caespitose. The white margin of the moist pileus is due to a silky web of interwoven white filaments. This with the short stem and less deeply decurrent lamellæ separate the variety from the typical form.

Polyporus cinnabarinus, Jacq.

The usual habitat of this fungus is wood of deciduous trees, but it occasionally occurs on hemlock, *Abies Canadensis*.

Polyporus abietinus, Fr. var. irpiciformis n. var.

Resupinate, at first orbicular, then often confluent in irregular patches, thin, the margin fimbriate, whitish; hymenium pallid, composed of radiating lamellæ gashed into subulate or fimbriate irpiciform aculei.

Bark of balsam, *Abies balsamea*. North Elba. Sept.

Some fungi belonging to the Polyporei are very variable and break over the generic limits assigned them. The species now under consideration apparently occurs in four well-marked forms, two pileate and two resupinate, one of each belonging to the genus *Polyporus*, or, as some classify it, to *Polystictus*, and one of each to *Irpex*, and therefore to the distinct order Hydnei.

The typical pileate form is very common in the Adirondack forests growing on trunks and branches of spruce, balsam, larch and sometimes on pine and hemlock. A resupinate form is also common. The form known as *Irpex fuscoviolaceus*, which is regarded by some mycologists as belonging to this species, is much more rare and has been observed by me on spruce only. But I have found it growing on the same trunk and in company with *P. abietinus*, and so closely resembling it in all respects save in the hymenium that it is difficult to believe it a distant species. The hymenium is similar in color to that of *P. abietinus*, but it is composed of radiating lamellæ (as in *Lenzites*), which are incised so as to form teeth or aculei as in *Irpex*. The discovery of the resupinate variety, now described as var. *irpiciformis*, strengthens the belief in the specific unity of *Irpex fuscoviolaceus* and *Polyporus abietinus*, for here again we have the radiating lamellæ incised into irpiciform teeth, thus showing the structure of the hymenium to be the same as in *I. fuscoviolaceus*, and besides this, we have a variation in color corresponding to that which occurs in the hymenium of *P. abietinus*. For in the resupinate form of *P. abietinus* the color of the hymenium, even in young and growing specimens is often much paler than in the typical pileate form, exhibiting scarcely a trace of violaceous color, but showing rather a pallid hue with a slight suggestion of pale cinnamon. This peculiar color is seen in variety *irpiciformis* and enforces the conclusion that it is not a distinct species of *Irpex* but rather a mere variety of *P. abietinus*. It indicates a very intimate connection between *Lenzites* among the Agaricini, *Polyporus*

among the polyporei and *Irpex* among the *Hydnei*. Such a blending of generic characters in one species is not very assuring to our present estimation of generic limits.

***Corticium cinereum* Fr. var. *fumigatum*, Thum.**

Dead branches of hickory, *Carya alba*. Selkirk. June.

***Geoglossum vitellinum*, Bres.**

Very abundant and luxuriant in mossy damp ground in the woods of North Elba. It was tested for its edible quality and found to be good. Its small size would ordinarily make it of but little importance as an esculent fungus, but this objection to it is in great measure obviated when it occurs in great profusion. It maintains the irregular character of the species even when growing luxuriantly.

(E.)

NEW YORK SPECIES OF CLITOPILUS.

***Clitopilus*, Fr.**

Stem fleshy or fibrous, diffused above into the pileus, of which the margin is at first involute. Hymenophore continuous with the stem. Lamellæ equally attenuated behind and subdecurrent, neither separating nor sinuate.

Terrestrial, often strong smelling, the pileus more or less depressed or umbilicate, the umbilicus similarly colored.

This genus belongs to the rosy or pink-spored series, and corresponds to *Clitocybe* in the white-spored series. It is separated from *Eccilia* by its fleshy stem, and from *Entoloma* by its adnate or decurrent lamellæ. The species are less numerous than those of *Clitocybe*, and some are separable from that genus by a slight difference in the color of the spores only. The spores of most of the species have the usual flesh-colored hue of the series *Hyporhodii*, but in two species they are more highly colored, exhibiting a rosy-red hue, while in a few species they are very pale, barely tinted with flesh color when caught on white paper. If caught on black or brown paper they appear sordid or whitish, and the species might then be sought in the genus *Clitocybe*. The spores of different species vary also in size and shape, thus furnishing important specific characters. Some of the species are edible, others are bitter and unpleasant in flavor. A farinaceous odor is observable in several species, and this is sometimes accompanied by a bitter taste. Most authors follow Fries in the

arrangement of the species, dividing them into two groups, the *Orcelli*, distinguished by deeply decurrent lamellæ and an irregular, scarcely hygrophanous pileus, with the margin at first flocculose; and *Sericelli*, distinguished by adnate or slightly decurrent lamellæ, and a regular silky or hygrophanous-silky pileus with a naked margin. This arrangement is not strictly applicable to some of our species. *C. abortivus*, *C. erythrosporus* and *C. Noveboracensis* have the lamellæ deeply decurrent in some individuals, adnate or slightly decurrent in others, and therefore the same species might be sought in both groups. For this reason, the primary grouping of our species has been made to depend on the variation in the spore colors. By far the greater number of our species appear to be peculiar to this country, only two of them occurring also in Europe.

SYNOPSIS OF THE SPECIES.

| | |
|---|---------------------------|
| Spores and mature lamellæ flesh-colored | 1 |
| Spores and mature lamellæ rosy-red | 9 |
| Spores very pale flesh-colored | 10 |
| 1. Pileus hygrophanous | 8 |
| 1. Pileus not hygrophanous | 2 |
| 2. Pileus gray or grayish-brown | 5 |
| 2. Pileus some other color | 3 |
| 3. Pileus white or whitish | 4 |
| 3. Pileus pale tan-color | <i>C. pascuensis.</i> |
| 4. Pileus firm, dry, pruinat | <i>C. prunulus.</i> |
| 4. Pileus soft, slightly viscid when moist | <i>C. Orcella.</i> |
| 5. Pileus large, more than 1.5 in. broad | <i>C. abortivus.</i> |
| 5. Pileus small, less than 1.5 in. broad | 6 |
| 6. Spores even | <i>C. unitinctus.</i> |
| 6. Spores angular | 7 |
| 7. Stem longer than the width of the zoneless pileus | <i>C. albogriseus.</i> |
| 7. Stem shorter than the width of the commonly zonate pileus | <i>C. micropus.</i> |
| 8. Pileus brown or grayish brown | <i>C. subvilis.</i> |
| 8. Pileus white or yellowish-white | <i>C. Woodianus.</i> |
| 9. Stem colored like the pileus | <i>C. erythrosporus.</i> |
| 9. Stem white, paler than the pileus | <i>C. conissans.</i> |
| 10. Pileus even | 11 |
| 10. Pileus rivulose | <i>C. Noveboracensis.</i> |
| 11. Stems cæspitose, solid | <i>C. cæspitosus.</i> |
| 11. Stems not cæspitose, hollow | <i>C. Seymourianus.</i> |

*Spores flesh-colored.**a. Spores even.***Clitopilus prunulus. Scop.**

PLUM CLITOPILUS.

Pileus fleshy, *compact*, at first convex and regular, then repand, *dry*, *pruinata*, white or cinereous white, flesh white, unchangeable, with a pleasant farinaceous odor; lamella deeply decurrent, subdistant, flesh-colored; stem solid, naked, striate, white; spores subelliptical, pointed at each end, .0004 to .00045 in. long, .0002 to .00025 broad.

Pileus 1.5 to 3 in. broad, stem 1 to 2 in. long, 3 to 4 lines thick.

Woods. Albany, Rensselaer and Saratoga counties.

Not abundant, but edible and said to be delicious and one of the best of the esculent species.

Clitopilus Orcella, Bull.

Pileus fleshy, *soft*, plane or slightly depressed, often irregular, even when young, *slightly silky*, somewhat *viscid* when moist, white or yellowish-white, flesh white, taste and odor farinaceous; lamellæ deeply decurrent, *close*, whitish, then flesh-colored; stem short, solid, flocculose, often eccentric, thickened above, white; spores elliptical, .00035 to .0004 in. long, .0002 broad.

Generally a little smaller than the preceding species, softer and more irregular, but so closely allied that by some it is considered a mere variety of it. It is said to be edible and of a delicate flavor. It occurs in wet weather in pastures and open places. Rensselaer county.

Clitopilus pascuensis, Pk.

PASTURE CLITOPILUS.

Pileus fleshy, compact, centrally depressed, *glabrous*, *reddish or pale-alutaceous*, the cuticle of the disk cracking into minute areas; lamellæ rather narrow, close, decurrent, whitish, becoming flesh-colored; stem short equal or tapering downward, solid, glabrous, colored like the pileus; spores subelliptical, pale incarnate, .0003 to .0004 in. long, .0002 to .00025 broad.

Pileus 2 to 3 in. broad; stem 8 to 18 lines long, 4 to 6 lines thick.

Pastures. Saratoga county.

The species is related to *C. prunulus* from which it is distinct by its shorter, paler spores, its glabrous pileus rimose-areolate on the disk, and tinged with red or alutaceous and by its paler lamellæ. From *C. pseudo-orcella* it differs in its glabrous pileus with no silky luster

and in its closer lamellæ. Its odor is obsolete but it has a farinaceous flavor. It is probably esculent, but has not been found in sufficient quantity to afford a test of qualities.

Clitopilus unitinctus, Pk.

ONE-COLORED CLITOPILUS.

Pileus thin, *submembranous*, flexible, convex or nearly plane, centrally depressed or umbilicate, glabrous, subshining, often concentrically rivulose, grayish or grayish-brown, flesh whitish or grayish-white, odor obsolete, taste mild; lamellæ narrow, moderately close, *adnate or slightly decurrent*, colored like the pileus; stem slender, straight or flexuous, subtenacious, equal, slightly pruinose, grayish-brown, with a close white mycelioid tomentum at the base and white root-like fibres of mycelium penetrating the soil; spores elliptical, .0003 in. long, .0002 broad.

Var. *albidus*. Whitish or grayish-white, not rivulose; lamellæ broader; spores brownish flesh-color.

Pileus 6 to 16 lines broad; stem about 1 in. long, 1 line thick.

Woods of pine or balsam. Albany and Essex counties. Autumn.

The variety is a little paler than the typical form, with lamellæ a little broader, but is probably not specifically distinct. The species is apparently closely related to *C. cicatrisatus* but differs in color. The pileus is somewhat silky-shining and is often wavy on the margin.

b. Spores angular or irregular.

1. Pileus not hygrophanous.

Clitopilus abortivus, B. & C.

ABORTIVE CLITOPILUS.

Pileus fleshy, firm, convex or nearly plane, regular or irregular, dry, *clothed with a minute silky tomentum*, becoming smooth with age, gray or grayish-brown, flesh *white*, taste and odor subfarinaceous; lamellæ thin, close, slightly or deeply decurrent, at first whitish or pale-gray, then flesh-colored; stem nearly equal, solid, minutely flocculose, sometimes fibrous-striated, colored like or paler than the pileus; spores irregular, .0003 to .0004 in. long, .00025 broad.

Pileus 2 to 4 in. broad; stem 1.5 to 3 in. long, 3 to 6 lines thick.

Ground and old prostrate trunks of trees in woods and open places. Rensselaer, Lewis and Albany counties. August and September.

This species is, in our State, the most abundant one of the genus. It is commonly gregarious, but it is also scattered and *cæspitose*. Frequently it fails to develop properly, and then forms irregular or subglobose fleshy whitish masses similar to those sometimes formed

by *Armillaria mellea*. These generally occur in company with the normal form and apparently under the same conditions of soil, moisture and temperature. They are suggestive of the name of the species. Our plant is related to *C. popinalis*, from which it is distinguished by its firmer less glabrous unspotted pileus, paler flesh and larger spores. *C. popinalis* var. *firmatus* is more closely allied by its compact texture, but its spotted pileus and umber-brown color both without and within easily distinguish it. Our species has been found to be edible, but its flavor is scarcely as agreeable as that of some other species.

Clitopilus albogriseus, Pk.

PALE-GRAY CLITOPILUS.

Pileus firm, convex or slightly depressed, *glabrous*, pale-gray, odor farinaceous; lamellæ moderately close, adnate or slightly decurrent, grayish, then flesh-colored; stem solid, colored like the pileus; spores angular or irregular, .0004 to .0005 in. long, .0003 broad.

Pileus 6 to 12 lines broad; stem 1.5 to 2.5 in. long, 1 to 2 lines thick
Woods. Adirondack mountains. August.

Clitopilus micropus, Pk.

SHORT-STEMMED CLITOPILUS.

Pileus thin, fragile, convex or centrally depressed, *umbilicate*, *silky*, gray, usually with one or two narrow zones on the margin, odor farinaceous; lamellæ narrow, close, adnate or slightly decurrent, gray, becoming flesh-colored; stem *short*, solid, slightly thickened at the top, pruinose, gray, with a white mycelium at the base; spores angular or irregular, .0004 in. long, .00025 broad.

Pileus 6 to 12 lines broad; stem 8 to 10 lines long, 1 line thick.

Thin woods. Essex and Rensselaer counties. Aug.

This species is closely allied to the preceding one, but may be separated from it by its short stem and silky umbilicate subzonate pileus. Both species are rare and have been observed only in wet, rainy weather.

2. *Pileus hygrophanous*.

Clitopilus subvilis, Pk.

WORTHLESS CLITOPILUS.

Pileus thin, centrally depressed or umbilicate, with the margin decurved, hygrophanous, *dark-brown* and striatulate on the margin when moist, grayish-brown and silky-shining when dry, taste farinaceous; lamellæ *subdistant*, adnate or slightly decurrent, whitish when young, then flesh-colored; stem slender, brittle, rather long, *stuffed or hollow*,

glabrous, colored like the pileus or a little paler; spores angular, .0003 to .0004 in. long.

Pileus 8 to 15 lines broad, stem 1.5 to 3 in. long, 1 to 2 lines thick.

Damp soil in thin woods. Albany county. October.

The species is allied to *C. vilis*, from which it is separated by its silky-shining pileus subdistant lamellæ and farinaceous taste.

Clitopilus Woodianus, Pk.

WOODS CLITOPILUS.

Pileus thin, convex or nearly plane, umbilicate or centrally depressed, hygrophanous; striatulate, on the margin when moist, *whitish or yellowish-white* and shining when dry, the margin often wavy or flexuous; lamellæ *close*, adnate or slightly decurrent, whitish, then flesh-colored; stem equal, flexuous, shining, *solid*, colored like the pileus; spores subglobose, angular, .00025 to .0003 in. long.

Pileus 1 to 2 in. broad; stem 2 to 3 in. long, 2 lines thick.

Ground and decayed prostrate trunks in woods. Lewis county. September.

This species is perhaps too closely allied to the preceding, but it may easily be separated by its paler color, closer lamellæ and solid stem, though this is sometimes hollow from the erosion of insects. In color it resembles *Entoloma Grayanum*, but it is a much more slender species with a different mode of attachment to the lamellæ.

Spores rosy-red.

Clitopilus erythrosporus; Pk.

RED-SPORED CLITOPILUS.

Pileus thin, hemispherical or strongly convex, glabrous or merely pruinose, pinkish-gray, flesh whitish tinged with pink, taste farinaceous, lamellæ narrow, crowded, arcuate, *deeply decurrent*, colored like the pileus; stem equal or slightly tapering upward, hollow, slightly pruinose at the top, *colored like the pileus*; spores elliptical, .0002 in. long, .00012 to .00016 broad.

Pileus 1 to 2 in. broad; stem 1 to 1.5 in. long, 2 to 3 lines thick.

Decayed wood and among fallen leaves in woods. Albany and Ulster counties. September and October.

The species is easily recognized by its peculiar uniform color, its narrow, crowded and generally very decurrent lamellæ and by its bright rosy-red spores. Sometimes individuals occur in which the lamellæ are less decurrent.

Clitopilus conissans, Pk.

DUSTED CLITOPILUS.

Pileus thin, convex, glabrous, pale-alutaceous, often *dusted by the copious spores*; lamellæ close, *adnate*, reddish-brown; stem slender, brittle, hollow, *cæspitose*, *white*; spores narrowly elliptical, .0003 in. long, .00016 broad.

Pilus 1 to 1.5 in. broad; stem 1 to 2 in. long, 1 to 2 lines thick.

Base of an apple tree. Catskill mountains. September.

Remarkable for the copious bright rosy-red spores which are sometimes so thickly dusted over the lower pilei of a tuft as to conceal their real color. The species is very rare.

Spores very pale flesh-colored, merely tinted.

Clitopilus cæspitosus, Pk.

TUFTED CLITOPILUS.

Pileus at first convex, firm, nearly regular, shining, white, then nearly plane, fragile, often irregular or eccentric, glabrous but with a slight silky lustre, *even*, whitish, flesh white, *taste mild*; lamellæ narrow, thin, crowded, often forked, *adnate* or slightly *decurrent*, whitish, becoming dingy or brownish-pink; stems *cæspitose*, solid, silky-fibrillose, slightly mealy at the top, white; spores .0002 in. long, .00016 broad.

Pileus 2 to 4 in. broad; stem 1.5 to 3 in. long, 2 to 4 lines thick.

Thin woods and pastures. Ulster county. Sept.

This is a large, fine species, very distinct by its *cæspitose* habit, white color and very pale sordid-tinted spores. But for the color of these the plant might easily be taken for a species of *Clitocybe*. The tufts sometimes form long rows.

Clitopilus Noveboracensis, Pk.

NEW YORK CLITOPILUS.

Pileus thin, convex, then expanded or slightly depressed, dingy white *rimose-areolate* or *concentrically rivulose*, sometimes obscurely zonate, odor farinaceous, *taste bitter*; lamellæ narrow, close, deeply *decurrent*, some of them forked, white, becoming dingy, tinged with yellow or flesh-color; stem equal, solid, colored like the pileus, the mycelium white, often forming white branching root-like fibres; spores globose .00016 to .0002 in. broad.

Var. *brevis*. Margin of the pileus, in the moist plant, pure white; lamellæ *adnate* or slightly *decurrent*; stem short.

Pileus 1 to 2 in. broad; stem 1 to 2 in. long, 1 to 3 lines thick.

Woods and pastures. Adirondack mountains, Albany and Rensselaer counties. August to October.

The plant is gregarious or caespitose. Sometimes, especially in the variety, it grows in lines or arcs of circles. The margin is often undulated, and in the variety it is, when fresh and moist, clothed with a film of interwoven webby white fibrils which give it a peculiar appearance, and if the spore characters are neglected it might be mistaken for *Clitocybe phyllophila*. The disk is often tinged with reddish-yellow or rusty hues when moist and its rivulose character is then more distinct. A farinaceous odor is generally present, especially in the broken or bruised plant, but its taste is bitter and unpleasant. Sometimes bruises of the fresh plant manifest a tendency to assume a smoky-brown or blackish color. The base of the stem is sometimes clothed with a white mycelioid tomentum. The species is apparently closely allied to *C. concentricus*, Gill., of which the lamellæ are said to be cinereous or reddish-cinereous, and the spores of a dirty rosy hue.

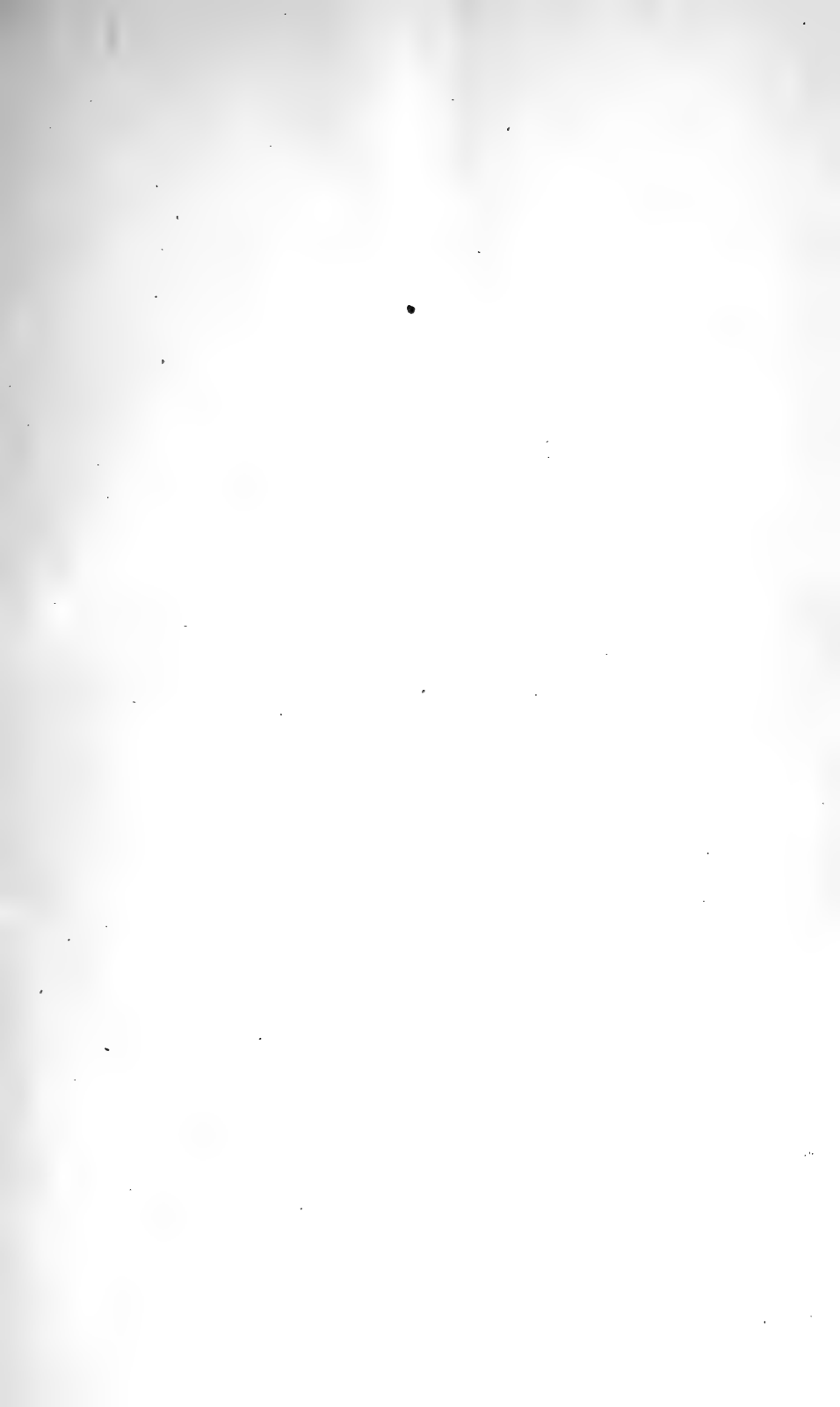
Clitopilus Seymourianus, Pk.

SEYMOUR'S CLITOPILUS.

Pileus fleshy, thin, broadly convex or slightly depressed, even, *pruinose*, *whitish with a dark lilac tinge*, sometimes lobed and eccentric; lamellæ narrow, crowded, decurrent, some of them forked at the base, whitish with a pale flesh-colored tint; stem equal, silky-fibrillose, *hollow*; spores minute, globose or nearly so, .00014 to .00016 in. long.

Pileus 1 to 2.5 in. broad; stem 1.5 to 2.5 in. long, 3 to 4 lines thick.

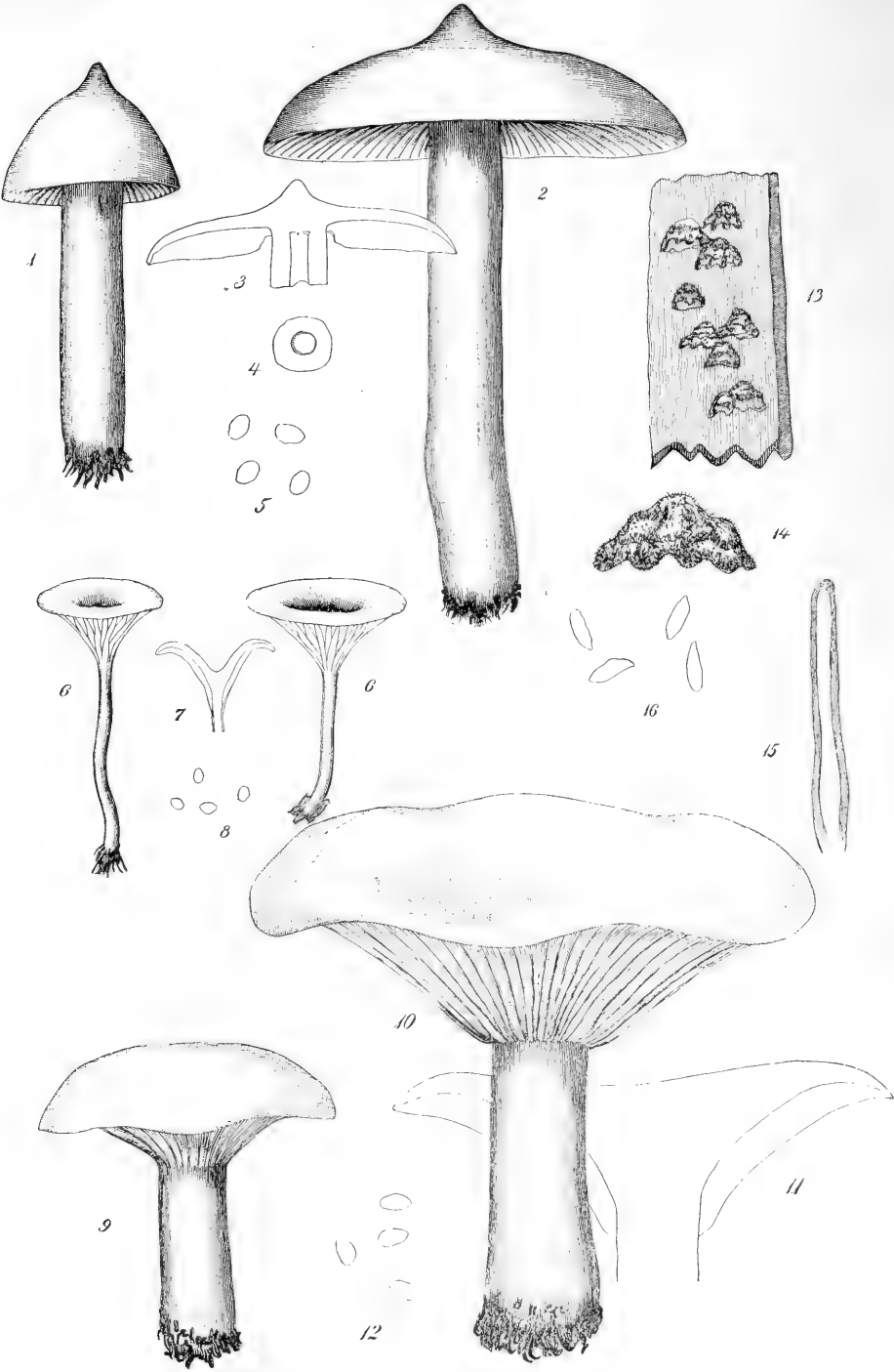
Woods. Lewis county. September.



FUNGI.

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Plate 1.



EXPLANATION OF PLATE 1.

TRICHOLOMA SUBACUTUM, *Peck.*

- Fig. 1. An immature plant.
Fig. 2. A mature plant.
Fig. 3. Vertical section of a pileus and upper part of its stem.
Fig. 4. Transverse section of a stem.
Fig. 5. Four spores $\times 400$.

CANTHARELLUS ROSELLUS, *Peck.*

- Fig. 6. Two mature plants.
Fig. 7. Vertical section of a pileus and upper part of its stem.
Fig. 8. Four spores $\times 400$.

CLITOCYBE MEDIA, *Peck.*

- Fig. 9. An immature plant.
Fig. 10. A mature plant.
Fig. 11. Vertical section of a pileus and upper part of its stem.
Fig. 12. Four spores $\times 400$.

HYMENOCHETE ABNORMIS, *Peck.*

- Fig. 13. Piece of spruce wood bearing eight plants.
Fig. 14. A plant enlarged.
Fig. 12. A seta from the hymenium $\times 400$.
Fig. 16. Four spores $\times 400$.

EXPLANATION OF PLATE 2.

OMBROPHILA ALBICEPS, Peck.

- Fig. 1. Piece of wood bearing four plants.
Fig. 2. A plant enlarged.
Fig. 3. A dried plant enlarged.
Fig. 4. An ascus with its spores and a paraphysis x 400.
Fig. 5. Four spores x 400.

NAUCORIA SCIRPICOLA, Peck.

- Fig. 6. An immature plant.
Fig. 7. A mature plant.
Fig. 8. Vertical section of a pileus and upper part of its stem.
Fig. 9. Transverse section of a stem.
Fig. 10. Four spores x 400.

GALERA RUFIPES, Peck.

- Fig. 11. A moist plant.
Fig. 12. A dry plant.
Fig. 13. Vertical section of a pileus and upper part of its stem.
Fig. 14. Transverse section of a stem.
Fig. 15. Four spores x 400.

TRICHOLOMA SILVATICUM, Peck.

- Fig. 16. A small umbonate plant.
Fig. 17. A larger plant without an umbo.
Fig. 18. Vertical section of a pileus and upper part of its stem.
Fig. 19. Four spores x 400.

THELEPHORA SCOPARIA, Peck.

- Fig. 20. Three plants attached to different matrices.
Fig. 21. Four spores x 400.

PISTILLARIA ALNICOLA, Peck.

- Fig. 22. Piece of bark of alder bearing four plants.
Fig. 23. A plant and its matrix enlarged.
Fig. 24. Four spores x 400.

PISTILLARIA VITICOLA, Peck.

- Fig. 25. Fragment of grape vine bearing six plants.
Fig. 26. A plant enlarged.
Fig. 27. Four spores x 400.

FUNGI.

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Plate 2.



[FROM THE 43d REPORT OF THE NEW-YORK STATE MUSEUM OF NATURAL HISTORY.]

ANNUAL REPORT

OF THE

STATE BOTANIST

OF THE

STATE OF NEW YORK. *1889.*

Made to the Regents of the University, Pursuant to
Chapter 355, of the Laws of 1883.

By CHARLES H. PECK.

ALBANY:
JAMES B. LYON, STATE PRINTER.
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STATE OF NEW YORK.

No. 61.

IN SENATE,

MARCH 21, 1890.

ANNUAL REPORT OF THE STATE BOTANIST.

OFFICE OF THE STATE BOTANIST, }
ALBANY, March 21, 1890. }

*To the Honorable the Regents of the University of the State of
New York :*

I have the honor to present to you my annual report for
the year 1889.

Very respectfully.

CHARLES H. PECK.



REPORT OF THE BOTANIST.

To the Honorable the Regents of the University of the State of New York:

GENTLEMEN.—I have the honor of communicating to you the following report:

Specimens of plants for the State Herbarium have been collected by the Botanist during the past season in the counties of Albany, Broome, Clinton, Columbia, Essex, Franklin, Greene, Kings, Oneida, Rensselaer, Saratoga, Schenectady, St. Lawrence, Suffolk, Ulster and Washington.

Specimens contributed by correspondents were collected in the counties of Essex, Onondaga, Orleans, Queens, Schoharie and Tompkins.

Specimens representing 229 species of plants have been added to the Herbarium during the past year, of which 207 were collected by the Botanist and 21 were contributed. Of the former, 84 are new to the Herbarium; of the latter, 21. The number of species represented in the Herbarium has therefore been increased by 105. Among these are 37 species of fungi considered new to science and hereinafter described as new species. A list of the species of which specimens have been added to the Herbarium is marked A.

23 persons have contributed specimens. Among the contributions are many extra-limital species not included in the foregoing enumeration. A list of the contributors and of their respective contributions is marked B.

A record of species not before reported, together with locality and habitat, and descriptions of such as are deemed new to science, is marked C.

Remarks concerning species previously reported, a record of new localities of rare plants and descriptions of new varieties will be found in a subdivision marked D.

Descriptions of New York species of *Armillaria* and remarks concerning them will be found under E.

The unusually wet character of the season now ended has afforded an excellent opportunity to observe the influence of rainy weather in promoting the growth of fungi. The prevailing temperature has not been high and there has been an almost conspicuous absence of thunder showers, yet rain storms have been frequent and sometimes copious, and cloudy, wet weather has been of long continuance. Under such influences the abundance and destructiveness of the parasitic fungi has been remarkable.

Monilia fructigena, a fungus which attacks apples, pears, peaches and plums, even while hanging on the trees, and breaks out upon their surface in small grayish or yellowish gray tufts, has rarely, if ever, been more abundant and destructive. It is such a pest to peaches that, in regions where they are generally cultivated, it has received the common name of "peach rot." But it is no less dangerous to plums in districts where their cultivation is general, and it might with equal reason be called "plum-rot" in such places. The diseased fruit often remains on the tree during the winter and becomes the source of infection to the next crop. This danger might be greatly lessened if the affected fruit could be gathered and burned or deeply buried in fall or early spring.

A currant-leaf fungus, *Glæosporium ribis*, has also been excessively virulent. In some localities currant leaves have been so severely attacked by it that their vigor was destroyed and they fell to the ground long before the usual time. In my own garden the currant bushes were as destitute of foliage in August as they usually are in November. This fungus does not attack the fruit, but when it is abundant on the foliage, which it covers with brownish or discolored spots, it must necessarily weaken the plants and diminish the succeeding crop of currants.

Glæosporium lagenarium is a fungus generically related to the preceding species. Its attacks upon muskmelons and watermelons have, in some instances, been very severe. It not only causes spots on the fruit, thereby spoiling it, but it has also attacked the foliage, causing spots on it and finally killing it and the vines.

Glæosporium Lindemuthianum is another species which commonly attacks the pods of some varieties of wax beans, producing discolored spots on them and injuring their market value. This year it has been quite aggressive and, in some instances, attacked varieties that were formerly free from it.

Squashes also have suffered unusually from a species of mold, *Rhopalomyces Cucurbitarum*, which invades the blossoms and young fruit and induces rapid decay in the latter.

The downy mildew of the grape, *Peronospora viticola*, has been unusually virulent in its attacks and remarkably luxuriant in its development upon some varieties of the grape. Few species of the cultivated fruits and vegetables of our gardens have wholly escaped the ravages of their respective fungous parasites.

The potato-rot fungus, *Peronospora infestans*, has been active in both garden and field, and has not been at all behind other species in its destructive energy. It was my purpose to make, in my own garden, a thorough trial of the Bordeaux mixture as a preventive of this disease. But the fungus made its appearance so much earlier than usual that the leaves were considerably spotted by it before the first spraying was made and consequently some spores were perfected and scattered before any treatment was given. Notwithstanding this and the tendency of the frequent rains to wash the mixture from the foliage, the plants treated with two applications maintained a green and comparatively healthy foliage much longer than those that were not sprayed. Wishing to see the result of planting diseased tubers, a dozen hills of such were placed on one side of a small experimental plat. By the side of this row three others of equal length were planted with sound tubers. The plants from the diseased tubers grew much more feebly than those from the sound tubers, and the fungus first appeared on the lower leaves of this row. It soon appeared on the adjoining rows but the discolored spots were less in number the more remote the row was from the source of infection. All the spotted leaves were then picked from the vines to see if the progress of the disease might thereby be checked. But it immediately appeared again and then the whole plat was sprayed with the Bordeaux mixture. This gave a very decided check to the progress of the disease. 11 days later, which was July fifteenth, the spraying was repeated. The foliage at this time was in excellent condition, looking green and healthy. An absence of two weeks then intervened. In the meantime heavy rains had fallen and washed much of the mixture from the foliage, and on my return I found the fungus had renewed the attack and made such headway that it was useless to continue the experiment. But enough had been

shown to indicate that if the foliage of the potato plant is kept whitened with the Bordeaux mixture it can be kept free from the fungus.

To try the effect of deep planting on the productive power of the potato, a trench about a foot deep was dug and 12 tubers planted in it about a foot apart. These were covered about four inches deep. At the same time 12 tubers were planted about four inches deep in a row by the side of the trench. As the plants in the trench grew, soil was, from time to time, thrown into the trench till it was filled. In all other respects the two experiment rows received the same treatment. The plants in the trench were more productive than those planted in the ordinary way, yielding 198 tubers weighing $19\frac{1}{2}$ pounds; the others yielding 155 tubers weighing 14 pounds. But the trench system proved superior not only in its greater production, but also in its better protection. Among the tubers dug from the 12 hills in the trench, four were found affected by rot, and these all occurred in two hills. But among those dug from the 12 hills planted in the usual way, 37 affected ones were found, nearly every hill furnishing some. Thus it is evident that deep planting is a protection against rot. The spores produced by the fungus on the leaves are the cause of the mischief in the tuber. They fall to the ground and are washed down through the soil to the tubers by the rain. They do not so easily reach the tubers when they are covered by a thick layer of earth as when they lie near the surface. It also follows that a very compact soil affords greater protection than a loose porous one, though it is not as favorable to production. In a part of the garden the soil was of such a character that the heavy rains had made it very firm and compact. It was scarcely possible to dig the tubers with the implements ordinarily used for this purpose because of the hardness of the soil. Although the vines here had been badly affected and speedily killed by the fungus no rotten tubers were found. The spores, which must have been very plentiful here, were prevented from reaching the tubers by the hard and compact condition of the soil over them. These two examples indicate the way in which the germs of the disease chiefly reach the tubers. Any practical method of preventing them from being washed down through the soil to the tubers will solve the problem of saving them from this infection. But it is far better to strive to pre-

vent the infection of the foliage, for in an early attack, like that of the past season, the foliage might be destroyed before the tubers were mature. In such a case the crop would be inferior in quantity and quality even if the tubers should remain unaffected. Thorough spraying with the Bordeaux mixture promises to do this if commenced before the fungus makes its appearance and repeated as often as it is washed off by rains.

Thinking that the great windfall in the Adirondack wilderness, where, about 45 years ago, a tornado swept through the forest and prostrated the trees, would be a good locality in which to study the action of wood-destroying fungi and obtain specimens of them, that place was visited. But two agencies had intervened to prevent the realization of my expectations. Forest fires had run through the windfall and consumed all the smaller material and so much time had elapsed since the death of the trees that what the fire had left had passed beyond its period of usefulness as a habitat for wood-loving fungi. Young trees, chiefly poplar, have grown all along in the track of the wind-storm. This wood is now so useful in furnishing material for pulp that the strip of land devastated by the storm is by no means destitute of value.

It was at this time that a peculiar appearance of the oat-fields in St. Lawrence county attracted my attention. The foliage of the plants presented a singular admixture of green, dead-brown and reddish hues, strongly suggestive of that of a "rust-struck" field. But upon examination no rust fungus could be found. Many of the leaves were either wholly or in their upper-half dead and discolored. On these dead parts were a few scattered tufts of a very minute fungus somewhat resembling the common *Cladosporium herbarum*. No other fungus was found upon them and no description has been found corresponding to the characters of this one. It has, therefore, been figured and described in this report as a new species of *Fusicladium*, to which genus it appears to belong. It is not improbable that it inhabits the leaves of some of our northern native grasses and has escaped from them to the oat-fields. It is so minute and so obscure in its character that it has probably been overlooked till now, but having escaped to the oat-fields, and having been stimulated by the favoring character of the season to an unusually abundant development, its existence could no longer be concealed. Its effect on the

foliage is so destructive that it must greatly diminish the yield of this grain in places where it abounds, for no plant can do its best work with half its foliage dead and discolored. It is probable that in an ordinarily dry season its attacks will be much less severe.

Not only have the parasitic fungi manifested great activity, but also the saprophytic, as has been indicated by the abundant and vigorous growth of those species that are found upon stumps, dead branches and prostrate trunks in and about our woodlands. A letter to me from P. H. Dudley, C. E., who is making a study of this subject, with especial reference to its practical and economic aspect, has such a direct bearing upon this subject and records observations of such practical value, that I have, with his permission, appended a copy of it to this report. It is marked F.

Very respectfully submitted.

CHAS. H. PECK.

ALBANY, *December 10*, 1889.

(A.)

PLANTS ADDED TO THE HERBARIUM.

New to the Herbarium.

- Thlaspi arvense L.*
Hesperis matronalis L.
Prunus avium L.
Trapa natans L.
Lacnanthes tinctoria Ell.
Setaria Italica Kunth.
Cynodon dactylon Pers.
Amanita nitida Fr.
Tricholoma sejunctum Sow.
T. grave Pk.
Clitocybe multiceps Pk.
C. catinus Fr.
Clitopilus stilbocephalus B. & Br.
Coprinus Brassicæ Pk.
Cortinarius glutinosus Pk.
C. annulatus Pk.
C. luteus Pk.
C. paludosus Pk.
Lactarius subinsulsus Pk.
L. mutabilis Pk.
Russula brevipes Pk.
R. pectinata Fr.
Marasmius foetidus Fr.
M. albiceps Pk.
Polyporus cæsarius Fr.
P. hispidus Fr.
Poria aurea Pk.
P. latemarginata D. & M.
Hydnum stratosum Berk.
H. pallidum C. & E.
H. acutum Pers.
Irpex rimosus Pk.
Corticium mutatum Pk.
C. Berkeleyi Cke.
C. subaurantiacum Pk.
C. basale Pk.
Peniophora unicolor Pk.
Clavaria similis Pk.
Ditiola conformis Karst.
Mutinus bovinus Morg.
Geaster fimbriatus Fr.
Scleroderma Geaster Fr.
Enteridium Rozeanum Wing.
Cribraria violacea Rex.
Comatricha longa Pk.
C. subcæspitosa Pk.
- Plasmodiophora Brassicæ Wor.*
Phyllosticta bicolor Pk.
P. Pruni Pk.
P. Silenes Pk.
P. Caricis Sacc.
Phoma allantella Pk.
P. Candollei Sacc.
Haplosporella Ailanthi E. & E.
Diplodia Æsculi Lev.
Leptostroma Polygonati Lasch.
Septoria Helianthi E. & K.
S. thecicola B. & Br.
Cytospora orthospora B. & C.
Glæosporium leptospermum Pk.
Melanconium magnum Berk.
Puccinia obscura Schræt.
P. Eleocharidis Arthur.
P. mammillata Schræt.
P. Malvacearum Mont.
Ustilago Austro-Americana Speg.
Doassansia Alismatis Corn.
Plasmopara Viburni Pk.
Sporotrichum cohærens Schw.
S. cinereum Pk.
Coniosporium Fairmañi Sacc.
C. culmigenum Berk.
C. Polytrichi Pk.
Torula convoluta Harz.
Echinobotryum atrum Cd.
Stachybotrys elongata Pk.
Zygodesmus muricatus E. & E.
Dematium parasiticum Pk.
Fusicladium destruens Pk.
Cercospora Apocyni E. & K.
C. granuliformis E. & H.
Sporodesmium antiquum Cd.
Stilbum Spraguei B. & C.
Isaria aranearum Schw.
Tubercularia carpogena Pk.
Fusarium Sclerodermatis Pk.
Epicoccum purpurascens Ehren.
Underwoodia columnaris Pk.
Lachnella cerina Phil.
Tapesia Rosæ Phil.
Helotium mycetophilum Pk.
Cenangium rubiginosum Cke.

Coronophora gregaria *Fekl.*
 Hæmatomyces faginea *Pk.*
 Barya parasitica *Fekl.*
 Hypoxylon effusum *Nits.*
 Eutypa flavovirescens *Tul.*
 Eutypella longirostris *Pk.*

Anthostoma microsporum *Karst.*
 Didymosporium effusum *Schw.*
 Cryptosporella hypodermia *Sacc.*
 Leptosphaeria dumetorum *Niessl.*
 Herpotrichia rhodomphalia *Sacc.*
 Lophiotrema auctum *Sacc.*

Not new to the Herbarium.

Ranunculus bulbosus *L.*
 R. repens *L.*
 Brasenja peltata *Pursh.*
 Capsella Bursa-pastoris *Moench.*
 Cardamine hirsuta *L.*
 Helianthemum Canadense *Mx.*
 Lechea major *Mx.*
 L. thymifolia *Pursh.*
 Linum Virginianum *L.*
 L. usitatissimum *L.*
 Rhus Toxicodendron *L.*
 Trifolium hybridum *L.*
 Desmodium rotundifolium *DC.*
 Lupinus perennis *L.*
 Rubus neglectus *Pk.*
 Rosa Carolina *L.*
 Amelanchier Canadensis *T. & G.*
 Lythrum alatum *Pursh.*
 Carum Carui *L.*
 Cicutula bulbifera *L.*
 Cryptotaenia Canadensis *DC.*
 Levisticum officinale *Koch.*
 Sium cicutæfolium *Gmel.*
 Aster diffusus *Ait.*
 A. multiflorus *Ait.*
 A. cordifolius *L.*
 A. ericoides *L.*
 A. Novi Belgii *L.*
 A. puniceus *L.*
 A. undulatus *L.*
 A. vimineus *Lam.*
 Solidago puberula *Nutt.*
 S. Elliottii *T. & G.*
 S. speciosa *Nutt.*
 S. nemoralis *Ait.*
 Achillea millefolium *L.*
 Artemisia caudata *Mx.*
 Sonchus arvensis *L.*
 Rudbeckia laciniata *L.*
 R. triloba *L.*
 Lobelia Kalmii *L.*
 L. inflata *L.*
 Plantago lanceolata *L.*
 Polygonum dumetorum *L.*

Celtis occidentalis *L.*
 Physalis viscosa *L.*
 Carya amara *Nutt.*
 Juglans cinerea *L.*
 Asparagus officinalis *L.*
 Potamogeton zosterifolius *Shum.*
 Juncus acuminatus *Mx.*
 J. Canadensis *J. Gay.*
 J. effusus *L.*
 J. filiformis *L.*
 J. scirpoides *Lam.*
 Carex blanda *Deu.*
 C. rosea *Schk.*
 Bromus ciliatus *L.*
 B. racemosus *L.*
 Andropogon macrourus *Mx.*
 Botrychium matricariæfolium *A.Br.*
 Amanita solitaria *Bull.*
 Armillaria mellea *Vahl.*
 A. nardosmia *Ellis.*
 Tricholoma variegatum *Scop.*
 Clitocybe laccata *Scop.*
 Collybia radicata *Belh.*
 C. hariolorum *DC.*
 C. tuberosa *Bull.*
 Mycena corticicola *Schum.*
 Omphalia chrysophylla *Fr.*
 O. striipilea *Fr.*
 Pleurotus striatulus *Fr.*
 Clitopilus Noveboracensis *Pk.*
 Inocybe rimosa *Bull.*
 Galera hypnorum *Batsch.*
 Coprinus fimetarius *Fr.*
 C. micaceus *Fr.*
 C. plicatilis *Fr.*
 Hygrophorus ceraceus *Fr.*
 Lactarius fuliginosus *Fr.*
 Russula nigricans *Fr.*
 R. sordida *Pk.*
 R. heterophylla *Fr.*
 R. crustosa *Pk.*
 R. fragilis *Fr.*
 Marasmius erythropus *Fr.*
 Lentinus lepideus *Fr.*

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| <i>Lentinus strigosus Schw.</i> | <i>Hydnum repandum L.</i> |
| <i>L. umbilicatus Pk.</i> | <i>H. aurantiacum A. & S.</i> |
| <i>Strobilomyces strobilaceus Berk.</i> | <i>H. subfuscum Pk.</i> |
| <i>Polyporus griseus Pk.</i> | <i>Irpex paradoxus Fr.</i> |
| <i>P. perennis Fr.</i> | <i>Stereum sanguinolentum Fr.</i> |
| <i>P. circinatus Fr.</i> | <i>S. rugosum Fr.</i> |
| <i>P. chioneus Fr.</i> | <i>S. ochraceoflavum Schw.</i> |
| <i>P. connatus Fr.</i> | <i>S. acerinum Pers.</i> |
| <i>P. glomeratus Pk.</i> | <i>Hymenochaete tabacina Lev.</i> |
| <i>P. balsameus Pk.</i> | <i>Clavaria botrytes Pers.</i> |
| <i>P. versicolor Fr.</i> | <i>Tremella foliacea Pers.</i> |
| <i>Poria vaporaria Fr.</i> | <i>Exidia glandulosa Fr.</i> |
| <i>P. mutans Pk.</i> | <i>Lycoperdon constellatum Fr.</i> |
| <i>P. attenuata Pk.</i> | <i>Scleroderma vulgare Fr.</i> |
| <i>Dædalea confragosa Pers.</i> | <i>S. Bovista Fr.</i> |
| <i>Trametes sepium Berk.</i> | <i>Stemonitis Morgani Pk.</i> |
| <i>Merulius lacrymans Fr.</i> | <i>Siphoptychium Casparyi Rost.</i> |
| <i>Solenia fasciculata Pers.</i> | <i>Ustilago segetum Dittm.</i> |

(B.)

CONTRIBUTORS AND THEIR CONTRIBUTIONS.

Mrs. D. B. Fitch, Norwich, N. Y.

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| <i>Viola sagittata Ait.</i> | <i>Trillium erectum L.</i> |
| <i>Flerkia proserpinacoides Willd.</i> | <i>Erythronium albidum Nutt.</i> |

L. F. Ward, Washington, D. C.

Hieracium præaltum Vill.

A. G. Grinnan, M. D., Madison Mills, Va.

Calostoma Berkeleyi Masee.

Prof. L. M. Underwood, Syracuse, N. Y.

| | |
|---|-----------------------------------|
| <i>Clitopilus stilbocephalus B. & Br.</i> | <i>Underwoodia columnaris Pk.</i> |
| <i>Hydnum stratosum Berk.</i> | <i>Eutypella longirostris Pk.</i> |
| <i>Peniophora unicolor Pk.</i> | |

C. E. Fairman, M. D., Lyndonville, N. Y.

| | |
|---|--|
| <i>Diplodia Æsculi Lev.</i> | <i>Eutypa flavovirescens Tul.</i> |
| <i>Zygodesmus muricatus E. & E.</i> | <i>Diatrype albopruinata Schw.</i> |
| <i>Tapesia Rosæ Phil.</i> | <i>Leptosphaeria dumetorum Niessl.</i> |
| <i>Haplosporella Ailanthi E. & E.</i> | <i>Coniosporium Fairmani Sacc.</i> |
| <i>Lophiotrema auctum Sacc.</i> | <i>C. culmigenum Berk.</i> |
| <i>Puccinia Malvacearum Mont.</i> | <i>Æcidium Lysimachiae Wallr.</i> |

F. E. Emery, Geneva, N. Y.

Puccinia Malvacearum Mont.

Prof. J. A. Lintner, Albany, N. Y.

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| <i>Uncinula macrospora Pk.</i> | <i>Fuligo varians Sommerf.</i> |
|--------------------------------|--------------------------------|

W. A. Setchell, Cambridge, Mass.

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| <i>Doassansia Alismatis Corn.</i> | <i>Tolysporium bullatum Schræt.</i> |
| <i>D. Sagittariæ Schræt.</i> | <i>Entyloma Compositarum Farl.</i> |
| <i>D. occulta Corn.</i> | |

Prof. J. C. Smock, Albany, N. Y.

Placodium elegans Lk. | *Theloschistes concolor* Dicks.

J. Dearness, London, Canada.

Teucrium botrytis L. | *Libertella acerina* West.
Botrytis geniculata Cd. | L. *faginea* Desm.

W. T. Swingle, Manhattan, Kansas.

Ustilago provincialis K. & S.

Prof. B. D. Halsted, New Brunswick, N. J.

Synchytrium Vaccinii Thom. | *Peronospora Cubensis* B. & C.

Harold Wingate, Philadelphia, Pa.

Oreadella operculata Wing. | *Comatricha longa* Pk.

Geo. A. Rex, M.D., Philadelphia, Pa.

Siphoptychium Casparyi Rost. | *Comatricha longa* Pk.
Physarum lividum Rost. | *Cribraria violacea* Rex.
Stemonitis dictyospora Rost.

Prof. H. J. Weber, Lincoln, Neb.

Puccinia vexans Farl.

Wm. Herbst, M. D., Trexlertown, Pa.

Pholiota æruginosa Pk. | *Polyporus lucidus* Leys.
Clitocybe multiceps Pk.

Rev. J. L. Zabriskie, Flatbush, N. Y.

Puccinia mammillata Schræt. | *Echinobotryum atrum* Cd.
Ustilago Austro-Americana Speg. | *Hypoxylon effusum* Nits.
Sporodesmium antiquum Cd. | *Comatricha longa* Pk.

P. H. Dudley, New York, N. Y.

Merulius lacrymans Fr. | *Polyporus hispidus* Fr.
Polyporus lucidus Leys.

S. M. Tracy, Agricultural College, Miss.

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| <i>Phragmidium Fragariastris</i> Schræt. | <i>Uromyces Trifolii</i> DC. |
| P. <i>subcorticium</i> Wint. | U. <i>Oenotheræ</i> Burr. |
| <i>Puccinia caulicola</i> T. & G. | U. <i>Lespedezæ</i> Pk. |
| P. <i>Sporoboli</i> Arth. | U. <i>Hyperici</i> Curt. |
| P. <i>Galiorum</i> Lk. | U. <i>appendiculatus</i> Lev. |
| P. <i>Hieracii</i> Mart. | U. <i>Euphorbiæ</i> C. & P. |
| P. <i>Andropogonis</i> Schw. | <i>Ustilago sphærogena</i> Burr. |
| P. <i>Helianthi</i> Schw. | <i>Uredo Artemisiæ</i> Rab. |
| P. <i>Silphii</i> Schw. | <i>Coleosporium Rubi</i> E. & M. |
| P. <i>Malvastri</i> Pk. | <i>Melampsora salicina</i> Lev. |
| P. <i>lateripes</i> B. & R. | <i>Ræstelia aurantiaca</i> Pk. |
| P. <i>heterospora</i> B. & C. | <i>Æcidium Clematidis</i> DC. |
| P. <i>Violæ</i> DC. | Æ. <i>Psoraleæ</i> Pk. |
| <i>Uromyces Spermacoces</i> Wint. | Æ. <i>Sii</i> Fekl. |
| U. <i>Sparganii</i> C. & P. | <i>Peridermium orientale</i> Cke. |
| U. <i>Terebinthi</i> Wint. | <i>Synchytrium fulgens</i> Schræt. |

Cystopus cubicus Lev.
Peronospora Halstedii Farl.
Microstroma leucosporum Mont.
Cylindrosporium Heraclei E. & E.
Cercospora Diospyri Thum.
C. *sordida* Sacc.
O. *clavata* Ger.
C. *Heliotropii* E. & E.
Cerebella Andropogonis Ces.

Piggotia Fraxini B. & C.
Sphæropsis Menispermii Pk.
Sphaerotheca Castagnei Lev.
Uncinula macrospora Pk.
Erysiphe graminis DC.
Capnodium puccinioides E. & E.
Phleospora Ulmi Wallr.
Phyllachora Ulmi Fekl.
Hypocrea Hypoxylon Schw.

F. W. Anderson, Great Falls, Mont.

Phragmidium Potentillæ Wint.
P. *subcorticium* Wint.
Puccinia Saxifragæ Schlect.
P. *Asteris* Duby.
P. *Tanacetii* DC.
P. *Malvastri* Pk.
P. *Troximontis* Pk.
P. *intermixta* Pk.
P. *variolaris* Hark.
P. *Polygoni-amphibii* Pers.
P. *hysteriiformis* Pk.
P. *Menthæ* Pers.
P. *Caricis* Reb.
P. *Giliæ* Hark.
P. *Rubigo-vera* DC.
P. *Phragmitis* Schum.
P. *graminis* Pers.
Uromyces Eriogoni E. & H.
U. *Junci* Schw.
U. *Trifolii* DC.
U. *Spragueæ* Hark.
Ustilago Caricis Fekl.
U. *Montaniensis* E. & H.
Melampsora Lini Tul.
M. *populina* Lev.
M. *salicina* Lev.
Uredo Oxytropidis Pk.
Coleosporium Sonchi-arvensis Lev.

Cronartium Asclepiadeum Kze.
Æcidium gaurinum Pk.
Æ. *monoicum* Pk.
Æ. *Clematidis* DC.
Æ. *Chrysopsidis* E. & A.
Æ. *Ligustici* E. & E.
Æ. *Asteratum* Schw.
Sporodesmium tabacinum E. & E.
Coniothyrium concentricum Desm.
Cladosporium Typharum Desm.
Helminthosporium subcuticulare E. & E.
Ramularia lactea Sacc.
Didymaria Clematidis C. & H.
Cystopus Bliti Biv.
C. *candidus* Lev.
C. *cubicus* Str.
Phyllactinia suffulta Reb.
Sphaerotheca Castagnei Lev.
Uncinula adunca Lev.
Erysiphe graminis DC.
E. *sepulta* E. & E.
E. *communis* Wallr.
E. *Cichoracearum* DC.
Nectria Ribis Rab.
Rhytisma salicinum Fr.
Leptosphaeria Typhæ Karst.

Prof. W. R. Dudley, Ithaca, N. Y.

Acer sacch. var. *nigrum* Gr. | *Ulmus racemosa* Thomas.

E. J. Forster, M. D., Boston, Mass.

Lepiota farinosa Pk.

Mrs. P. H. Dudley, New York, N. Y.

Fruit of passion flower, *Passiflora edulis*. An alga from the hot springs of Arkansas. Collected by Mrs. L. E. Holden.

(C.)

PLANTS NOT BEFORE REPORTED.

Hesperis matronalis, L.

Roadside, near Feurabush, Albany county. May. This plant is sometimes cultivated for ornament and escapes from cultivation and becomes naturalized in some places. Buffalo. *David F. Day.*

Prunus avium, L.

Ravines and hillsides. Near Catskill. May. Also reported by Professor Dudley as frequent about Ithaca, and especially abundant on both shores of Cayuga lake. An introduced plant which has escaped from cultivation.

Trapa natans, L.

This curious aquatic has been introduced, but is well established in Sander's lake, near Schenectady.

Aster vimineus, Lam.

This species is not rare in moist, sandy soil in the eastern part of Long Island. It is variable in aspect, the branches being either horizontal or somewhat ascending, and having the flowers either crowded or racemous.

Lacnanthes tinctoria, Ell.

Near Manor, Suffolk county. August. This plant is named in the list of those mentioned by Dr. Torrey in the Flora of New York, Vol. II, p. 522, as likely to occur on Long Island. Its occurrence in this place has verified his prediction.

Cynodon dactylon, Pers.

Vacant lots in Long Island city. September. This is considered a valuable grass in some of the southern States, but it is very persistent and eradicated with some difficulty. As it prefers a warmer climate it will probably not prove troublesome on Long Island.

Amanita nitida, Fr.

Menands, Albany county. Our plant is more slender than the typical form and has smaller, but more numerous, warts, but in other respects it exhibits the characters of this species.

Tricholoma sejunctum, Sow.

Mixed woods. Manor and Quogue. September. This species is not uncommon in sandy soil on Long Island, though in Europe it

occurs chiefly in gravelly soil. With us it varies considerably in the color of the pileus, which may be either white or pale yellow, tinged with green or brown. It is often irregular or deformed and frequently destitute of an umbo. The fibrils are either brown or blackish. The bitter taste is sometimes absent.

***Tricholoma grave*, n. sp.**

[Plate 1. Figs. 5 to 8.]

Pileus at first hemispherical, then broadly convex, compact, glabrous, grayish-tawny and somewhat spotted when moist, paler when dry, the margin paler, involute, often irregular, clothed with a minute appressed grayish-white tomentum or silkiness, flesh grayish-white; lamellæ subdistant, rounded behind or sinuate, adnexed, at first whitish, then pale ochraceous-tawny; stem stout, compact, solid, subsquamulose or furfuraceous, abruptly attenuated at the base, penetrating the soil deeply, grayish-white; spores broadly elliptical, .0003 in. long, .0002 broad.

Pileus 5 to 8 in. broad; stem 3 to 4 in. long, 1 to 1.5 in. thick.

Mixed woods of pine and oak. Manor. September.

This species is remarkable for its great size and weight. It is apparently allied to *Tricholoma colossus*, from which it is separated by the absence of any viscidness of the pileus, the radicating character of the base of the stem and by the flesh not assuming a reddish color. By its moist pileus it appears to belong to the Spongiosi rather than to the Limacini among which *T. colossus* is placed.

***Clitocybe multiceps*, n. sp.**

Pileus fleshy, thin except on the disk, firm, convex, slightly moist in wet weather, whitish, grayish or yellowish-gray, flesh white, taste mild; lamellæ close, adnate or slightly decurrent, whitish; stems densely caespitose, equal or slightly thickened at the base, solid or stuffed, firm, elastic, slightly pruinose at the apex, whitish; spores globose, .0002 to .0003 in. broad.

Pileus 1 to 3 in. broad; stem, 2 to 4 in. long, 3 to 6 lines thick.

Open places, grassy ground, etc. Albany and Sandlake. June and October. This species forms dense tufts often composed of many individuals. In this respect it is related to such species as *Clitocybe tumulosa*, *C. aggregata* and *C. illudens*. From the crowding together of many individuals the pileus is often irregular. Sometimes the disk is brownish and occasionally slightly silky. The lamellæ are sometimes slightly sinuate, thus indicating a relationship to the

species of *Tricholoma*. The taste, though mild, is somewhat oily and unpleasant. The plants appear in wet, rainy weather, either early in the season or in autumn. Specimens have been sent to me from Massachusetts by R. K. Macadam and Professor Farlow, and from Pennsylvania by Dr. W. Herbst.

***Clitocybe catinus*, Fr.**

Ray Brook, Adirondack mountains. August. The pileus is at first white, but in wet weather it becomes pallid or discolored with age. The plants were found growing among pieces of bark of *arbor vitæ* lying on the ground.

***Clitopilus stilbocephalus*, B. & Br.**

Syracuse. October. Prof. L. M. Underwood. The specimens apparently belong to the variety represented in Cooke's Illustrations, plate 599.

***Coprinus Brassicæ*, n. sp.**

[Plate 2. Figs. 9 to 14.]

Pileus membranous, at first ovate or conical, then broadly convex, squamulose, finely striate to the disk, white becoming grayish-brown, the margin generally splitting and becoming recurved; lamellæ narrow, crowded, reaching the stem, brown with a slight ferruginous tint; stem slender, glabrous, hollow, slightly thickened at the base, white; spores elliptical, brown, .0003 in. long, .0002 broad.

Pileus 4 to 5 lines broad; stem 8 to 10 lines long.

Decaying stems of cabbage, *Brassica oleracea*. Menands. August.

The species is easily known by its squamulose pileus and its brown lamellæ and spores. It is related by these to such species as *C. phæosporus*, *C. Friesii* and *C. tigrinellus*.

***Cortinarius (Phlegmacium) glutinosus*, n. sp.**

Pileus convex, glutinous, brownish-ochraceous, the margin narrowly involute, flesh yellowish; lamellæ adnexed, olivaceous; stem solid, thickened at the base, scarcely bulbous, whitish or pallid; spores subglobose or broadly elliptical, .0003 in. long, .00025 to .0003 broad.

Pileus 1 to 3 in. broad; stem 1.5 to 3 in. long, 3 to 5 lines thick.

Mossy ground under hobble bushes, *Viburnum lantanoides*. Sevey. Adirondack mountains. July.

The dull ochraceous pileus, olivaceous lamellæ and pallid stem are the prominent features of the species. The margin of the pileus is sometimes rimose. In drying the color changes to a chestnut hue.

Cortinarius (Inoloma) annulatus, n. sp.

[Plate 2. Figs. 1 to 4.]

Pileus broadly convex, dry, villose-squamulose, yellow, flesh yellowish; lamellæ rather broad, subdistant, adnexed, yellow; stem solid, bulbous, somewhat peronate by the yellow fibrillose annular-terminated veil; spores broadly elliptical or subglobose, .0003 in. long.

Pileus 1 to 3 in. long; stem 1.5 to 3 in. long, 3 to 6 lines thick.

Thin woods. Whitehall. August.

The whole plant is yellow inclining to ochraceous. It has the odor of radishes. The squamules of the pileus are pointed and erect on the disk, and often darker colored there. The species is allied to *C. tophaceus* and *C. callisteus*, from which it is separated by its persistently annulate stem and more yellow color.

Cortinarius (Dermocybe) luteus, n. sp.

Pileus conical or convex, unpolished, yellow, often darker on the disk, flesh yellow; lamellæ adnexed, yellow; stem equal, long, solid, silky fibrillose, yellow; spores subglobose or broadly elliptical, .0003 in. long, nearly as broad.

Pileus 1 to 2 in. broad; stem 2 to 4 in. long, 6 lines thick.

Mossy ground in woods. Sevey. July.

Closely related to *C. cinnamomeus*, but differing in its stouter stem and nearly uniform yellow color.

Cortinarius (Telamonia) paludosus, n. sp.

Pileus conical or convex, ferruginous when moist, buff-yellow or pale ochraceous when dry, flesh yellowish; lamellæ broad, subdistant, adnate, saffron-yellow; stem long, equal, flexuous, solid, peronate and subannulate by the fibrillose yellow veil; spores .0003 to .00035 in. long, .0002 broad.

Pileus 1 to 1.5 in. broad; stem 2 to 3 in. long, about 2 lines thick.

Mossy ground in swamps. Rainbow, Franklin county. August.

Lactarius subinsulsus, n. sp.

Pileus firm, convex or nearly plane, umbilicate, viscid, azonate, glabrous, whitish or pallid, the margin at first slightly tomentose, soon naked, milk white, tardily acrid; lamellæ narrow, crowded, adnate or decurrent, whitish; stem short, hollow, whitish, not spotted; spores subglobose, .0003 to .00035 in. long, .0003 broad.

Pileus 2 to 4 in. broad; stem 1 to 1.5 in. long, 6 to 8 lines thick.

Pine groves. Rainbow. August.

The species is allied to *L. insulsus*, from which it is distinct by its zoneless pileus, tomentose young margin and tardily acrid taste. The stem is without spots and obscurely rugulose-reticulated, as in some species of *Russula*. The tomentose young margin puts the species among the *Tricholomoidei* near *L. pubescens*.

***Lactarius mutabilis*, n. sp.**

[Plate 1. Figs. 1 to 4.]

Pileus thin, convex or nearly plane, zonate when moist, reddish-brown, the disk and zones darker, zoneless when dry, flesh colored like the pileus, milk sparse, white, taste mild; lamellæ narrow, close, adnate, whitish, with a yellowish or cream-colored tint when old; stem equal or tapering upward, stuffed or spongy within, glabrous, colored like the pileus; spores subglobose, rough, .0003 in. broad.

Pileus 2 to 4 in. broad; stem 1 to 2 in. long, 3 to 5 lines thick.

Low, damp places. Selkirk and Yaphank. June and September.

The species is allied to *L. subdulcis*, from which the larger size and zonate pileus separate it. The zones disappear in the dry plant, and this change in the marking of the pileus suggests the specific name. They appear to be formed by concentric series of more or less confluent spots and are suggestive of such species as *L. deliciosus* and *L. subpurpureus*.

***Russula brevipes*, n. sp.**

[Plate 2. Figs. 5 to 8.]

Pileus at first convex and umbilicate, then infundibuliform, dry, glabrous or slightly villose on the margin, white, sometimes varied with reddish-brown stains, flesh whitish, taste mild, slowly becoming slightly acrid; lamellæ thin, close, adnate or slightly rounded behind, white; stem very short, solid, white; spores globose, verruculose, .0004 to .0005 in. in diameter.

Pileus 3 to 5 in. broad; stem 6 to 10 lines long, 6 to 10 lines thick.

Sandy soil in pine woods. Quogue. September.

This species is related to *Russula delicata*, but is easily distinguished by its short stem and crowded lamellæ. The pileus also is not shining and the taste is tardily somewhat acrid. From *Lactarius exsuccus* it is separated by the character of the lamellæ and the very short stem which is about as broad as it is long. The spores also are larger than in that species. The lamellæ in the young plant are sometimes studded with drops of water. They are not clearly decurrent. Some of them are forked at the base. The pileus is but slightly raised above the surface of the ground and is generally soiled by adhering dirt and often marked by rusty or fuscous stains. The plants grew in old roads in the woods where the soil had been trodden and compacted.

Russula pectinata, Fr.

Grassy or mossy ground in thin woods or groves. Menands and Cemetery, Albany county. July.

Marasmius foetidus, Fr.

On fallen twigs, leaves, etc. Manor. September. In our plant the pileus is rufescent. The stem also is rufescent above, brown below. The species is easily known by its strong odor.

Marasmius albiceps, n. sp.

[Plate 2. Figs. 15 to 18.]

Pileus membranous, either convex or campanulate, glabrous, white; lamellæ broad, distant, adnate or arcuate-decurrent, white; stem corneous, setiform, glabrous, black, paler at the apex, attached to the matrix by radiating brown hairs or fibres; spores obovate or subelliptical, .00025 to .0003 in. long, about half as broad, usually containing a shining nucleus.

Pileus about 2 lines broad; stem 8 to 15 lines long.

Among fallen leaves in mixed woods. Manor. September. In shape the pileus often approaches that of *Omphalia fibula*. In the larger specimens the lamellæ are strongly decurrent as in that species.

Polyporus cæsarius, Fr.

The specimens which I have referred to this species have a striking resemblance to faded specimens of *Polyporus sulphureus*, but in addition to the paler pileus the pores are white and more unequal. The spores, also, are smaller than those of *P. sulphureus*, though I can not tell if they agree with the spores of the European *P. cæsarius*, for I have been able to find no description which gives their dimensions. Our specimens were found at the base of an oak stump, near Manor. September.

Polyporus hispidus, Fr.

Oak trunk. Quogue. September. But a single, rather old specimen was found. It is evidently a rare species with us, though said to be more plentiful farther south.

Poria late-marginata, D. & M.

Prostrate trunk of wild red cherry, *Prunus Pennsylvanica*. South Ballston.

Poria aurea, n. sp.

Effused, forming patches several inches in extent, 2 to 3 lines thick, separable from the matrix, golden yellow; subiculum thin, sub-gelatin-

ous, the young margin byssoid or fimbriate, greenish-yellow, soon disappearing; pores small, subrotund, elongated, the dissepiments thin, rather soft; spores minute, subelliptical, .00016 to .0002 in. long, .00008 to .00012 broad.

Decaying wood of maple, *Acer saccharinum*. Sevey. July.

Apparently closely related to *Poria xantha*, but separable from the matrix and remarkable for its somewhat gelatinous subiculum. It is an attractive species.

Hydnum stratosum, Berk.

Lower side of an old log. Syracuse. Underwood.

This is a very singular species. The subiculum appears as if formed of a coarse brown tow-like tomentum, while the aculei appear in two or three strata one above another. They are connected at the base by slender branches or processes similar to themselves in color and texture.

Hydnum pallidum, C. & E.

Dead branches of oak, *Quercus alba*. Manor. September. At first small suborbicular patches appear with distant aculei, but with age these patches become confluent and the aculei longer and more numerous. The subiculum, when dry, becomes rimose as in species of *Corticium*. The spores in our specimens are minute, elliptical, .0002 in. long, .0001 to .00012 broad.

Hydnum acutum, Pers.

Decaying wood of deciduous trees. Sevey. July.

The species of Persoon has been regarded as having doubtful value by some European authors. Our plant agrees tolerably well with his description. It forms irregular, scarcely noticeable spots, one or two inches broad. The subiculum is scarcely more than a slight meanness or prinosity, with a somewhat indefinite margin. It is subcinereous when moist, whitish or pallid when dry. The aculei are very distant, acute or setiform, rather rigid but scarcely visible to the naked eye. The spores are subglobose, slightly angular, .00016 to .0002 in. in diameter.

Irpex rimosus, n. sp.

Resupinate, at first suborbicular, then confluent, forming irregular patches, thin, whitish or pallid, becoming rimose-areolate, the margin more or less free or slightly reflexed; hymenium, at first subporous or dædaloid, the dissepiments soon prolonged into aculei which are either subulate compressed or incised, and at length fasciculate from the cracking of the subiculum.

Bark of birch, *Betula lutea*. Catskill mountains. September.

Corticium mutatum, n. sp.

Effused, forming irregular extended patches; hymenium tumid when moist, centrally tuberculose, with more or less evident radiating folds toward the margin, much thinner when dry, nearly even, rimose, dingy yellowish inclining to cream color or slightly tinged with flesh color, the margin byssoid or subfimbriate, white; spores oblong, colorless, straight or slightly curved, .0006 to .0007 in. long, .00016 to .0002 broad.

Dead bark of poplar *Populus tremuloides*. Sevey. July.

The species is related to *Corticium leve*, but differs in its color and in the character of its spores. It is remarkable for the difference between the fresh moist specimens and the dry ones. In the former the hymenium is so uneven that it is suggestive of *Phlebia*, but in the latter the folds and tubercles have disappeared and the hymenium has become rimose, revealing the white subiculum in the chinks. This change is suggestive of the specific name.

Corticium Berkeleyi, Oke.

Decaying wood of willow, *Salix alba*. Copake. June.

The specimens have been identified by comparison only, as I have seen no description of this species. They are to this extent doubtful.

Corticium subaurantiacum, n. sp.

Effused, soft, thin, the tomentose subiculum and margin bright orange; hymenium even, grayish-yellow or orange tinted, having a pruinose appearance, sometimes slightly rimose when dry; spores subelliptical, .0003 in. long, .0002 broad.

Dead bark of spruce, *Picea nigra*. Rainbow. August.

It bears some resemblance to *Merulius subaurantiacus*, but there are no folds in the hymenium.

Corticium basale, n. sp.

Effused, closely adnate, tough, at first whitish, the hymenium becoming brown with a waxy appearance, the broad margin dingy-white.

Base of living trees. Whitehall. August.

It follows the inequalities of the bark from which it is inseparable. It is remarkable for its waxy appearance, but very tenacious substance. It was found on the bases of ash, *Fraxinus Americana* and basswood, *Tilia Americana*. The specimens were sterile.

Peniophora unicolor, n. sp.

Effused, thin, membranous, soft, subseparable, even, subpulverulent, pale ochraceous, the margin and subiculum concolorous with or a

little paler than the hymenium, sometimes extending in branching string-like fibers; metuloids sparse, subcylindrical, obtuse, rough, .0016 in. long, .0003 broad.

Decaying wood. Syracuse. September. *Underwood*.

The specimens are imperfect, being destitute of spores, but the species is apparently quite distinct by the characters given.

***Clavaria similis*, n. sp.**

Cæspitose, subtenacious, slender, three to four times dichotomously branched, pallid, the ultimate ramuli short, obtuse, the axils rounded; spores subglobose, .00025 in. in diameter, mycelium white.

Plant 1 to 2 in. high. Woods. Plattsburgh. August.

This scarcely differs from *Clavaria muscoides*, except in its paler color and in the obtuse tips of the ultimate ramuli.

***Ditiola conformis*, Karst.**

Decaying wood of birch, *Betula lutea*. Catskill mountains. September.

***Mutinus bovinus*, Morg.**

Sandy soil. Manor. September. The spores are the same as in *Mutinus Ravenelii*, to which this plant appears to be too closely related.

***Geaster fimbriatus*, Fr.**

Ground in woods. Whitehall. August.

This is the twelfth species of *Geaster* that has been found in our State. Most of the species are quite rare and some have been found but once.

***Scleroderma Geaster*, Fr.**

Sandy soil. Manor. September.

***Enteridium Rozeanum*, Wing.**

Decaying wood. North Greenbush. This is *Reticularia*? *Rozeana* Rost. It resembles *Reticularia Lycoperdon* externally and has sometimes been confused with it.

***Cribraria violacea*, Rex.**

Bark of balsam fir. Adirondack mountains. G. A. Rex.

***Comatricha longa*, n. sp.**

[Plate 3. Figs. 1 to 5.]

Stems growing from a shining membranous hypothallus, closely gregarious, penetrating the peridia as a columella, capillary, black;

peridia narrowly cylindrical, generally elongated, six to twenty lines long, often flexuous, very fugacious, grayish-black; capillitium rising from the columella, its branches generally somewhat reticulately connected near their base and forming a few large meshes, externally divided into slender, sharp-pointed, divergent, spine-like branchlets, with free apices, blackish; spores globose, even, .0003 to .00035 in. in diameter.

Bark of willow, *Salix Babylonica*. Flatbush. September. Rev. J. L. Zabriskie.

In the color of the spores and capillitium as seen in mass this plant resembles *Stemonitis fusca*. In size also it equals or exceeds that species. But in the character of the capillitium it is quite peculiar. Sometimes its branches, which grow in an alternate manner from the sides of the columella, are two or three times forked and entirely free, but usually they are somewhat connected with each other near the columella, but have their ultimate ramuli wholly free. By this character it differs considerably from other species of the genus, but scarcely enough, it seems to me, to warrant its generic separation. The columella generally passes through the capillitium nearly or quite to its apex, but sometimes in very long specimens it is lost above in the few large meshes. Fine specimens of this remarkable species have been sent me from Philadelphia, Pa., where it is not rare, by Messrs. Stevenson, Rex and Wingate. Specimens from the last gentleman are quite two inches long.

Comatricha subcæspitosa, n. sp.

[Plate 3, Figs. 6 to 9.]

Stems subcæspitose or loosely clustered, thickened at the base, black, about half the length of the sporangia, extending through the capillitium as a columella; peridia ovate-oblong, obtuse, fugacious; capillitium growing from the columella, reticulately connected and also forming a superficial net with coarse meshes, blackish; spores globose, even, blackish-brown, .0004 to .00045 in. in diameter.

Decorticated wood of hemlock, *Tsuga Canadensis*. Sandlake. July.

This species resembles *Stemonitis fusca* in color. In size it approaches *Comatricha typhina*. Its capillitium is variously connected, and appears to combine the reticulation of *Comatricha* and *Stemonitis*, but on account of the net work not being wholly parallel to the walls of the peridium it is placed in *Comatricha*. The plants are mostly collected in small groups or loose clusters of two to ten individuals. Its coarser meshes and larger spores distinguish it from *C. typhina*.

Plasmodiophora Brassicæ, Wor.

Roots of cabbage, *Brassica oleracea*. Menands. October.

This fungus causes swellings or excrescences in the roots of the host plant. These swellings have received the common name "club-root." Cabbages attacked by this disease fail to perfect their heads. The affected roots should be taken from the ground and burned in order to destroy the fungous spores they contain. It has been recommended that the ground should not again be planted with cabbages or other plants of the Mustard family until after the lapse of two or three years, in order that the germs of this disease, which may be in the soil, may have time to perish. In the meantime other crops may occupy the land.

Phyllosticta bicolor, n. sp.

Spots rather large, two to six lines broad, irregular, at first brown, then centrally whitish, with a broad brown margin, brown beneath; perithecia epiphyllous, occupying the whitish or central part of the spots, minute, .004 to .005 in. broad, black; spores minute, oblong, colorless, .0002 to .00025 in. long, .00008 to .0001 broad.

Living leaves of thimbleberry, *Rubus odoratus*. Whitehall. August.

Phyllosticta Prini, n. sp.

Spots small, suborbicular, white or grayish above, brownish beneath; perithecia small, .007 in. broad, epiphyllous, depressed, black; spores elliptical or oblong, .0003 to .0005 in. long, .00016 broad.

Living leaves of winterberry, *Ilex verticillata*. Catskill mountains. September.

Phyllosticta Silenes, n. sp.

Spots large, sometimes occupying half the leaf, pallid; perithecia amphigenous or hypophyllous, minute, punctiform, black; .004 to .005 in. broad; spores oblong or cylindrical, colorless; .0004 to .0005 in. long, .00015 to .0002 broad.

Living leaves of sleepy catchfly, *Silene antirrhina*. Copake Iron Works. June.

Phyllosticta Caricis, Sacc.

Living leaves of Pennsylvanian sedge, *Carex Pennsylvanica*. Catskill mountains. September.

Phoma allantella, n. sp.

Perithecia subglobose, subsuperficial, .007 to .008 in. broad, black; spores minute, allantoid, .00016 to .0002 in. long, about half as broad.

Whitened decorticated wood of oak, *Quercus rubra*. Catskill mountains. September.

Phoma Candollei, Sacc.

Leaves of box, *Buxus sempervirens*. Patchogue. August.

Haplosporella Ailanthi, E. & E.

Dead bark of *Ailanthus glandulosus*. Lyndonville. May. C. E. Fairman.

Diplodia Æsculi, Lev.

Dead bark of horse chestnut, *Æsculus Hippocastanum*. Lyndonville. Fairman.

Leptostroma Polygonati, Lasch.

Dead stems of giant Solomon's seal, *Polygonatum giganteum*. Menands. May.

Didymosporium effusum, Schw.

Dead bark of slippery elm, *Ulmus fulva*. Copake Iron Works. June.
Our plant differs somewhat from the type, and may be designated as

Var. *distinctum*. Heaps rotund, erumpent, distinct; spores oblong, oblong-ovate or elliptical, uniseptate, rarely biseptate, colored, .0014 to .0018 in. long, .0006 to .0008 broad, oozing out and staining the matrix.

Septoria Helianthi, E & K.

Living leaves of sunflower, *Helianthus annuus*. Rainbow. August.
Our plant is a variety in which the perithecia are amphigenous and the spots by confluence are very large and irregular.

Septoria thecicola, B. & Br.

Capsules and pedicels of moss, *Polytrichum juniperinum*. Sevey. July.

Cytospora orthospora, B. & C.

Dead branches of clammy locust, *Robinia viscosa*. Sandlake. June.

Melanconium magnum, Berk.

Dead bark of sugar maple, *Acer saccharinum*. Stark, St. Lawrence county. July.

Puccinia Eleocharidis, Arthur.

Living stems of *Eleocharis palustris*. Shore of Lake Champlain, near Plattsburgh. August.

Puccinia mammillata, Schraet.

Living leaves of hedge bindweed, *Polygonum dumetorum*. Flatbush. October. Zabriskie.

Puccinia Malvacearum, Mont.

Living leaves of hollyhock, *Malva sylvestris*. Geneva. May. F. E. Emery. Lyndonville, C. E. Fairman. This fungus causes a disease in hollyhocks that has sometimes been so severe in Europe as to prevent the cultivation of these flowers.

Puccinia obscura, Schrœt.

Living leaves and stems of field rush, *Luzula campestris*. Menands. May.

Our specimens do not fully agree with the description of the European fungus, but the agreement morphologically is so close that it does not seem advisable at present to separate our plant specifically. According to Plowright, "the teleutospores are not formed until August or September," but in our specimens they occur in May, and are intermingled with the uredospores, occurring in the same sorus with them. Mesospores were not seen. The name *Puccinia obscura* var. *vernalis* is proposed for this fungus, as it will indicate the principal character wherein it differs from the European plant. The teleutospores are not more highly colored than the uredospores, though this may be due to their young condition.

Ustilago Austro-Americana, Speg.

Living leaves and spikes of Pennsylvanian knotweed, *Polygonum Pennsylvanicum*. Flatbush. September. Zabriskie.

"The spores ooze out in tendrils sometimes six lines long." This is the fourth species of smut that has been found on species of *Polygonum* in our State.

Doassansia Alismatis, Cornu.

Living leaves of water plantain, *Alisma Plantago* var. *Americana*. Sharon Springs. July. W. A. Setchell.

Plasmopara Viburni, n. sp.

Spots irregular, somewhat indefinite, more or less confluent along the principal veins of the leaves, brown or reddish-brown; hyphæ hypophyllous, sparse, inconspicuous, bearing two to four short, nearly horizontal and mostly alternate branches near the top, the ultimate ramuli terminating in two or three sterigmata or subulate points; conidia terminal on the branches, subglobose, ovate or broadly elliptical, nearly colorless, generally .0006 to .0008 in. long, .0005 to .0006 broad, occasionally .0012 to .0016 in. long.

Living leaves of arrow wood, *Viburnum dentatum*. Baiting Hollow Station, Long Island. September.

This fungus is very closely allied to *Plasmopara viticola*, B. & De T. *Peronospora viticola* of most authors, of which it may prove to be only a variety. It is much smaller than that plant and does not form dense downy tufts or patches, but is so scattered and sparse in its mode of growth as to be not easily visible to the naked eye. Conidia of monstrous size are not rare, but oöspores were not seen. Its habit of following the veins of the leaf is peculiar.

Sporotrichum cohærens, Schw.

On an old wooden pail in a cellar. Menands. September.

Sporotrichum cinereum, n. sp.

Patches oblong, effused, pulverulent, cinereous; hyphæ very slender, .00015 in. broad, branched, crispate-flexuous, denticulate; spores abundant, globose, .00012 to .00016 in. in diameter.

Wood of apple tree. Manor. September.

Coniosporium Fairmani, Sacc.

Dried shell of Hubbard squash. Lyndonville. Fairman.

Coniosporium culmigenum, Berk.

Dead stems of motherwort, *Leonurus cardiaca*. Lyndonville. Fairman.

The spores in these specimens are smaller than in the type. The specimens are labeled var. *minor*.

Coniosporium Polytrichi, n. sp.

Heaps of spores minute, .003 to .004 in. broad, closely gregarious, superficial, black; spores globose, granulose, black, .00065 to .0008 in. in diameter.

Capsules of moss, *Polytrichum juniperinum*. Sevey. July.

Torula convoluta, Harz.

Decaying tubers of potato, *Solanum tuberosum*. Menands. April.

Echinobotryum atrum, Cd.

Decaying tubers of potato. Menands. April. Flatbush. Zabriskie.

Stachybotrys elongata, n. sp.

[Plate 3. Figs. 10 to 13.]

Hyphæ elongated, intricately branched, sparingly septate, minutely roughened, forming brown tomentose cushion-shaped tufts one to three lines in diameter, the fertile branches terminated by a capitate cluster of spores borne upon more or less elongated sporophores,

which are mostly thickened or bulbous at the base; spores globose, colored, .00025 to .0003 in. in diameter.

Dead branches of maple, *Acer rubrum*. Manor. September.

The pulvinate tufts resemble those of *Streptothrix atra*, but are paler in color.

***Zygodesmus muricatus*, E. & E.**

Decaying wood. Lyndonville. May. Fairman.

***Dematium parasiticum*, n. sp.**

[Plate 3. Figs. 14 to 18.]

Fertile hyphæ erect, simple or slightly branched, septate, colored, bearing catenulate spores at their tips and on their sides; spores subelliptical or limoniform, mostly pointed at one or both ends, colored, .0004 to .0005 in. long, .0002 to .00025 in. broad.

Parasitic on some *Hydnum*, apparently *H. carbonarium*. Rainbow. August.

The parasite gives a smoky-black hue to the *Hydnum*.

***Fusicladium destruens*, n. sp.**

[Plate 3. Figs. 19 to 22.]

Hyphæ rather short, .0008 to .002 in. long, fasciculate, continuous or with one or two septa near the base, colored, forming small olive-green tufts or patches; spores acrogenous, simple or occasionally uniseptate, sometimes slightly catenulate, elliptical or oblong, colored, .0003 to .0008 in. long, .0002 to .0003 broad. Living leaves of oats, *Avena sativa*. Sevey. July.

In the affected plants, the apical part of the leaf first shows symptoms of disease. The tissues die and the color changes to rusty-red or dead-brown. This change goes on till the whole leaf is involved. Soon the minute and inconspicuous tufts of the fungus appear. In the southern part of St. Lawrence county, which was visited by the writer the past summer, scarcely a field of oats was free from this disease. So prevalent was it, that the general color of the fields was changed thereby, and it was the opinion of the owners that their oats were "rusting" badly. Upon close examination, however, no "rust" was to be found. In its stead the discoloration of the leaves and the fungus now described appeared. It is, apparently, a very injurious and destructive fungus. The mycelium is pale and provided with numerous conspicuous septa.

***Cercospora granuliformis*, E. and H.**

Living leaves of violets, *Viola blanda*. Sevey. July.

Cercospora Apocyni, E. and K.

Living leaves of Indian hemp, *Apocynum cannabinum*. Whitehall. August. The hyaline character of the hyphæ indicate that the species belongs rather to *Cercospora*.

Sporodesmium antiquum, Cd.

Decaying wood. Flatbush. September. *Zabriskie*.

Macrosporium Polytrichi, n. sp.

Hyphæ erect, septate, somewhat nodulose, colored, .003 to .004 in. long, .0002 broad, forming continuous olive-green patches; spores extremely variable, elliptical, oblong or clavate, colored, 2 to 9 septate, with or without longitudinal septa, .0008 to .0024 in. long, .0003 to .0006 broad.

Capsules of moss *Polytrichum juniperinum*. Sevey. July.

Stilbum Spraguei, B. & C.

Dead stems of cabbage, *Brassica oleracea*. Menands. August.

The spores in our plant are elliptical, .00025 in. long. The receptacle becomes bay-red or chestnut color in drying.

Isaria aranearum, Schw.

On a dead spider. Manor. September.

Our plant does not agree rigidly with the description of *I. aranearum*, but the differences appear too slight to warrant its separation. The club is paler with scarcely any incarnate tint. The spores are very minute, .00012 to .00016 in. long, about half as wide.

Tubercularia carpogena, n. sp.

Receptacle minute, depressed, glabrous, subsuperficial, red; spores oblong or subfusiform, straight or slightly curved, .0004 to .0005 in. long, pointed at each end, produced on slender branched sporophores.

Ripe fruit of blackberry, *Rubus villosus*. Menands. August.

This appears at first sight like a minute species of *Peziza* or *Mollisia*. It discolors the affected drupes, making them red like itself. It is therefore easily overlooked.

Fusarium Sclerodermatis, n. sp.

Sporodochia minute, convex, reddish-yellow or orange; sporophores somewhat branched, about as long as the spores; spores simple or with two or three obscure septa, slightly curved, very acute at each end, .0012 to .0018 in. long, .00016 broad.

On the peridium of *Scleroderma vulgaris*. Manor. September.

Gloeosporium leptospermum, n. sp.

Spots yellowish, small, irregular, subindeterminate; acervuli amphigenous, small, rotund, oblong or irregular, erumpent, brown or blackish; spores subcylindrical, slightly pointed, straight, colorless, .0008' to .001 in. long, .00016' broad.

Living fronds of *Pteris aquilina*. Sevey. July.

By its slender spores, this species approaches the genus *Cylindrosporium*.

Epicoccum purpurascens, Ehren.

Rind of decaying squashes. Menands. November.

Underwoodia, gen. nov.

Receptacle fleshy, more or less elongated, columnar or stem-like, externally uneven sulcate-costate or lacunose, everywhere ascigerous, internally excavated, lacunosely fistulose or containing several longitudinal cavities; asci eight-spored, paraphysate.

A genus of *Helvellaceæ*, allied to *Helvella*. It is as if the stem of *Helvella crispa* should be deprived of its pileus and entirely covered with an adnate hymenium, thus becoming a stemless receptacle; or as if the receptacle of a *Morchella* were greatly elongated and stemless.

Dedicated to Professor L. M. Underwood.

Underwoodia columnaris, n. sp.

[Plate 4. Figs: 1 to 4.]

Receptacle columnar, straight or slightly curved above, externally somewhat sulcate-costate or lacunosely uneven, whitish or brownish, within white, containing several longitudinal cavities, stemless; asci cylindrical, .007 to .008 in. long .0006 broad; spores elliptical verruculose, .0008 to .0009 in. long, .0005 broad, colorless, containing a single large nucleus.

Plant 4 to 6 inches high, 8 to 12 lines broad.

Among fallen leaves. Kirkville, Onondaga county. July.

Three specimens of this singular fungus were found by *Professor J. T. Fischer*. To facilitate their preservation by drying they were divided longitudinally. Halves of two of them were sent to me by Professor Underwood and from this material and from accompanying notes and sketches I have drawn up the description and figure. It is evidently a rare as well as a remarkable fungus.

Lachnella cerina, Phil.

Decaying wood of birch, *Betula lutea*. Cascadeville, Adirondack mountains. September.

Tapesia Rosæ, Phil.

Dead stems of wild rose. Lyndonville. May. Fairman.

Helotium mycetophilum, n. sp.

Receptacles gregarious, minute, .01 to .014 in. broad, sessile or with a very short stem, plane or convex, scarcely margined, yellowish externally, the hymenium orange; asci oblanceolate, .003 in. long, .0004 broad, paraphyses filiform; spores oblong-elliptical, simple, the endochrome sometimes divided, .0006 to .0007 in. long, about half as broad.

On old *Polyporous fomentarius*. Rainbow. August.

Much smaller than *H. citrinum* and distinguished from it by its larger spores and orange-colored hymenium. Also distinct from *H. episphaericum* by the character of the spores.

Cenangium rubiginosum, Cke.

Dead twigs of water beech, *Carpinus Americana*. Mechanicville. July.

Coronophora gregaria, Fckl.

Dead branches of mountain ash, *Pyrus Americana*. Cascadeville. July.

Hæmatomyces faginea, n. sp.

[Plate 4. Figs. 5 to 7.]

Tremelloid, cerebriform, one to two inches in diameter, gyrose-lobate, glabrous, shining, raisin color without and within; asci nearly cylindrical, eight-spored, .0024 in. long, .0003 broad; paraphyses slender, very slightly thickened above; spores generally uniseriate, narrowly elliptical, colorless, .0003 in. long, .00015 to .0002 broad.

Dead trunks of beech, *Fagus ferruginea*. Rainbow. August.

The plants are nearly as thick as they are broad and appear as if composed of several confluent individuals. The color resembles somewhat that of a ripe Catawba grape though darker. Without examination of the spores the plant might easily be taken for a species of *Tremella*. It shrinks very much in drying and is then very hard.

Barya parasitica, Fckl.

[Plate 4. Figs. 13 to 17.]

Parasitic on a sphæriaceous fungus, *Bertia moriformis*, on decaying wood of beech. Catskill mountains. September.

Our plant differs in some respects from Fuckel's figure and description of the species, yet it is apparently only a variety and not specifically distinct. The perithecia are crowded together in dense tufts or clusters and sometimes taper above into a rather long neck. The

asci and spores are far more slender and somewhat longer than those of the European plant as represented by Fuckel's figure and description. The globose termination of the ascus is at the apex, not at the base as Fuckel has it. Because of these differences I have given a figure of our plant and designated it as variety *caespitosa*.

Hypoxylon effusum, Nits.

Decaying chestnut wood. Flatbush. September. *Zabriskie*. The smaller spores distinguish this species from *H. serpens*.

Eutypa flavovirescens, Tul.

Dead branches. Lyndonville. May. *Fairman*.

Eutypella longirostris, n. sp.

[Plate 4. Figs. 8 to 12.]

Stroma suborbicular, convex, formed of the slightly changed substance of the bark, whitish, covered by a black crust, often somewhat confluent in series; perithecia minute, globose, few or many in a stroma; ostiola elongated, fasciculately crowded, straight or flexuous, often fully one line long, radiately sulcate at the apex and sometimes sulcate on the sides also, black; asci clavate, pedicellate, the sporiferous part .0007 to .0009 in. long, .00016 broad; spores minute, curved, .0002 to .00025 in. long.

Bark of elm, *Ulmus Americana*. Sandlake. *Peck*. Syracuse. *Underwood*.

This is easily distinguished from the allied species by its very long ostiola and its very short asci and spores.

Anthostoma microsporum, Karst.

Dead bark of alder, *Alnus incana*. West Albany. May.

Cryptosporella hypodermia, Sacc.

Dead branches of slippery elm, *Ulmus fulva*. Copake Iron Works. June.

Leptosphaeria dumetorum, Niessl.

Dead branches of cultivated honeysuckle. Lyndonville. May. *Fairman*.

Herpotrichia rhodomphalia, Sacc.

Decaying wood of locust, *Robinia Pseudacacia*. Yaphank. September.

Lophiotrema auctum, Sacc.

Dead stems of wild rose. Lyndonville. June. *Fairman*.

The three following species are extra-limital and are not yet to be included in the New York flora. Being considered new species it is desirable that descriptions of them should be published.

Lepiota farinosa, n. sp.

Pileus thin, rather tough, flexible, at first globose or ovate, then campanulate or convex, covered with a soft dense white floccose-farinose veil which soon ruptures, forming irregular, easily detersible scales, more persistent and sometimes brownish on the disk, flesh white, unchangeable; lamellæ close, free, white, minutely floccose on the edge; stem equal or slightly tapering upward, somewhat thickened at the base, slightly farinose, often becoming glabrous, hollow or with a cottony pith above, solid at the base, white, pallid or straw-colored, the annulus lacerated, somewhat appendiculate on the margin of the pileus, evanescent; spores subovate, .0004 to .0005 in. long, .0003 broad. Pileus 1.5 to 2.5 in. broad; stem 2 to 3 in. long, 2 to 4 lines thick.

Mushroom beds in a conservatory. Boston, Mass. March. Communicated by *E. J. Forster*.

This species is related to *L. cepæstipes*, from which it may be distinguished by its pileus which is not plicate on the margin and by its larger spores. It is edible. It is very distinct from *Amanita farinosa*.

Pholiota æruginosa, n. sp.

Pileus hemispherical or convex, obtuse, glabrous, greenish, becoming tinged with brown, sometimes slightly rimose-areolate, flesh pale or whitish, tinged with green; lamellæ broad, rounded behind, adnexed, pale ochraceous when young, becoming bright ferruginous or orange ferruginous; stem solid, glabrous or slightly fibrillose, somewhat sulcate-striate, colored like the pileus, sometimes curved, flexuous or cæspitose; annulus slight, lacerated, evanescent; spores copious, bright ferruginous, subelliptical, .0003 to .00035 in. long, .00016 to .0002 broad.

Pileus .5 to 2 in. broad; stem 1 to 1.5 in. long, 2 to 3 lines thick.

Decaying railroad ties of oak. Trexlertown, Pennsylvania. October. *William Herbst*.

This species is remarkable for its greenish color and for its abundant bright colored spores, which sometimes fall upon and completely cover the surface of the lower pilei in a tuft. It is easily distinguished from *Stropharia æruginosa* by its solid stem, dry pileus and bright ferruginous lamellæ and spores. It belongs to the Section *Ægeritini*.

Phellorina Californica, n. sp.

Peridium subobconic, thin, even or slightly rimose-areolate, 9 to 12 lines high, 12 to 18 lines broad at the top, whitish becoming rusty-ochraceous, the vertex convex; stem nearly equal, solid but softer

within, clothed with a whitish bark, colored like the peridium with which it is continuous, 2.5 to 3 in. long, 4 to 5 lines thick; capillitium sparse; spores globose, ochraceo-ferruginous, .00025 to .0003 in. in diameter.

Mohave desert, California. *S. B. and W. F. Parish.* Communicated by *C. G. Pringle.*

Two specimens were collected in May, 1882. These were sent me in the dried state, but did not show the mode of dehiscence; but all the characters seen indicate that the plant is a *Phellorina*, differing from the published species in its obconic peridium and in the color of the spores. In *P. inquinans* these are described as golden yellow; in *P. erythrospora* and *P. squamosa* as brick-red. The peridium in all these is described as depressed-globose; but in our specimens it is more nearly the shape of a rather broad wine-glass. There are fragments of a whitish bark remaining on the stem, and appearances of a thinner one on the peridium. Where the bark has fallen the dry stem is sulcate-striate and rusty-ochraceous. Subglobose colorless cells, considerably larger than the spores, are intermingled with them. They are probably free basidia.

(D.)

REMARKS AND OBSERVATIONS.

Ranunculus repens, *L.*

A form of this species was found many years ago growing on the banks of the Erie canal between Rome and Oriskany. It was described in Beck's Botany under the name *Ranunculus Clintonii*. It is yet found in this locality, and also occurs by the roadside just at the southeastern limits of Rome.

A double-flowered form is sometimes seen in flower gardens and occasionally escapes from cultivation. It has been found in the streets of Bergen, Genesee county, and by the side of the railroad at Union Church, Albany county. In the latter case its origin can be traced to a neighboring flower garden.

Cardamine hirsuta, *L.*

A tall, leafy and very glabrous form. Menands. July.

Rhus Toxicodendron, *L.*

The entire-leaved variety occurs at Yaphank, Long Island. It has been reported to me as comparatively harmless so far as poisonous quality is concerned, and my experience in handling it was entirely without harm.

Trifolium hybridum, L.

A white-flowered form. Whitney's Point. June.

Lythrum alatum, Pursh.

This western plant is well established at Selkirk, Albany county.

Sium cicutæfolium, Gmel.

Var. *brevifolium*. Leaflets lanceolate or linear-lanceolate, one inch or less in length. Cedar Lake, St. Lawrence county.

Carum carui, L.

A form with pinkish-tinted flowers. Feurabush, Albany county. Also near East Bloomfield, Ontario county.

Diodia teres, Walt.

Manor, L. I. This plant is apparently a recent introduction in this locality. It occurs also on Staten Island.

Solidago nemoralis, Ait.

This species is quite variable. A form was found near Yaphank in which the panicle is greatly elongated, being a foot or more in length. It is leafy below and in this respect simulates *S. caesia*.

Solidago puberula, Nutt.

This golden-rod is quite common on the eastern part of Long Island. Its general appearance, except in the color of the flowers, is quite similar to that of *S. bicolor*. It also occurs on the Shawangunk and Catskill mountains and is very abundant in the Rainbow lake region of the Adirondacks. In this locality it is less puberulent and flowers about a month earlier than on Long Island.

Solidago speciosa, Nutt.

Var. *angustata* was found on Long Island, near Baiting Hollow station. Its narrow virgate panicle appears at first sight quite similar to that of *S. puberula*.

Achillea millefolium, L.

Near Colton, St. Lawrence county. The form with red ray flowers, which give it an ornamental appearance.

Plantago lanceolata, L.

A singular form with compound ovate spikes. Whitney's Point.

Potamogeton zosteræfolius, Schum.

Cedar lake, St. Lawrence county. July.

Juncus effusus, L.

A form with distinctly striate scapes and densely crowded panicles, but the pods scarcely pointed. It is, therefore, intermediate between the typical form and the variety *conglomeratus*. Rainbow. August. *Juncus filiformis* occurs in the same locality.

Juncus acuminatus, Mx.

Wet ground. Selkirk. July. The variety *legitimus* with heads of numerous flowers.

Juncus scirpoides, Lam.

A few plants of the variety *macrostemon* of this, with us, rare species were found in wet sandy soil near Yaphank. September.

Botrychium matricariæfolium, A. Br.

Ray Brook, Essex county. Both this species and the allied *B. lanceolatum* are now known to occur in the Adirondack region.

Clitocybe laccata, Scop.

This is an exceedingly variable species, and it might be well to designate some of the strongly marked variations by name. Variety *pallidifolia*. Lamellæ whitish or pallid, decurrent. Selkirk.

Omphalia stripilea, Fr.

Var. *albogrisea*. Pileus pale gray. Prostrate trunks of maple, *Acer saccharinum*. Rainbow. August.

Coprinus micaceus, Fr.

The pileus is sometimes sprinkled with more or less persistent squamules. The micaceous particles are not always clearly discernible on it.

Coprinus fimetarius, Fr.

Of this very variable species there is a small form growing on decayed wood in woods. It has the spores rather smaller than in the type, they being .0004 to .00045 in. long, .0003 broad. It might be designated var. *silvicola*.

Cortinarius croceus, Schæff.

Most authors consider this a variety of the very variable *C. cinnamomeus*. The form of it mentioned by Fries as having the stem and lamellæ olivaceous occurs in sphagnum swamps between Rainbow lake and Jones' pond.

Lactarius fuliginosus, Fr.

A form with the pileus colored like that of *Lactarius lignyotus*, but with the lamellæ much closer than in that species was found in a swamp near Sevey. July.

Hygrophorus Cantharellus, Schw.

This is very common in the Adirondack region and is also very variable in color. In wet weather it is plentiful in groves of poplar, especially where there is an undergrowth of brakes, *Pteris aquilina*.

Var. *flava*. Pileus and stem pale yellow; lamellæ arcuate, strongly decurrent.

Var. *flavipes*. Pileus red or reddish; stem yellow.

Var. *flaviceps*. Pileus yellow; stem red or reddish.

Hygrophorus miniatus, Fr.

This species is also common in the Adirondack region and often has the pileus one to two inches broad. It sometimes grows in circles and is frequently caespitose, in which case the stem is apt to be compressed or irregular. Its bright colors render it very attractive. The pileus is often minutely squamulose or roughened with a yellowish scurf. The lamellæ are yellowish, or yellow tinged with red.

Lentinus strigosus, Schw.

This species was described from specimens that grew on trunks of the tulip tree. It is not rare with us, growing on stumps, trunks and branches of birch, oak and other deciduous trees. It was found this season growing on trunks of balsam fir at Ray Brook, Essex county.

Boletus speciosus, Frost.

Var. *brunneus*. Pileus brown; otherwise like the type. Sevey. July.

Polyporus perennis, Fr.

The pileus sometimes becomes whitish or grayish-white with age. Sevey. July.

Polyporus sulphureus, Fr.

This showy species occurs on both hard and soft wood. It sometimes protrudes from dead spots in standing living trees, especially of oak, chestnut and cherry. The yellowish milk or juice is not always present.

Polystictus versicolor, Fr.

Var. *fumosiporus*. Pores smoky-brown; otherwise as in the type. Catskill mountains. September.

Poria mutans, Pk.

Var. *tenuis*. Very thin, tender, the margin often wide and downy. Bark and wood of spruce, *Picea nigra*. Sevey. July.

The species appears to differ from *P. cruentata* Mont. in having the pores and subiculum of one uniform yellowish or subochraceous color, which changes where bruised or in drying to a dull red or subincarnate hue.

***Solenia fasciculata*, Pers.**

On old pilei of *Polyporus piceinus*. Sevey. July.

***Stemonitis Morgani*, Pk.**

Fine large specimens of this species were found on an alder trunk, near Catskill. June.

***Septoria Violæ*, West.**

Var. *oligocarpa*. Spots small, white; perithecia few, black. Living leaves of *Viola blanda*. Sevey. July.

***Geoglossum luteum*, Pk.**

Var. *fumosum*. Club smoky yellow, less compressed; stem dingy, scarcely squamulose.

Mossy banks, Adirondack mountains. August.

***Cenangium balsameum*, Pk.**

Var. *abietinum*. Receptacles smaller than in the type, externally clothed with a yellowish-green pulverulence when young, naked and black when old; spores subclavate.

Dead branches of hemlock, *Tsuga Canadensis*. Whitehall. August. *Gelatinosporium abietinum* was associated with it.

***Sphærotheca pruinosa*, C. & P.**

The typical form was found on leaves of *Rhus glabra*. Specimens have now been found on living leaves of the staghorn sumach, *Rhus typhina*. In these the mycelium is a little more dense. Plattsburgh. August.

(E.)

NEW YORK SPECIES OF ARMILLARIA.

***Armillaria*, Fr.**

Hymenophorum continuous with the stem. No universal veil; partial veil forming an annulus, sometimes only indicated by the scales which adorn the stem and terminate above in the form of a ring. Spores white.

This genus is separated from *Amanita* and *Lepiota* by the absence of a universal veil and by the lamellæ which are attached to the stem. The three sections, in which the species were grouped by Fries, closely correspond respectively to the three genera *Tricholoma*,

Clitocybe and Collybia. From these they are distinguished by the presence of an annulus. They are also separated from Pholiota and Stropharia by their white spores.

Our species are few, and with one exception very rare. Three have been found in New York; eight in the United States. Most of the species grow on the ground; some on both wood and ground.

The name *Armillaria* is derived from the Latin *armilla*, a bracelet, and has reference to the annulus or ring that encircles the stem.

SYNOPSIS OF THE SPECIES.

- Pileus wholly white, glabrous *A. ponderosa*.
 Pileus not wholly white or not glabrous 1
 1 Pileus adorned with dark spots, margin even *A. nardosmia*.
 1 Pileus adorned with hairy squamules, margin striate... *A. mellea*.

Armillaria ponderosa, *Pk.*

HEAVY ARMILLARIA.

Report 26, p. 50. *Agaricus magnivelaris*, Rep. 29, p. 66.

Pileus thick, compact, convex or subcampanulate, smooth, white or yellowish, flesh white, the naked margin strongly involute, the slightly viscid veil persistent; lamellæ crowded, narrow, slightly emarginate, white inclining to cream color; stem stout, subequal, firm, solid, coated by the veil, colored like the pileus, white and furfureous above the annulus; spores nearly globose, .00016 in. in diameter.

Pileus 4 to 6 in. broad; stem 3 to 5 in. long, about 1 in. thick. Ground in woods. Columbia county. October.

The veil conceals the young lamellæ for a long time, and finally becomes lacerated and adheres in shreds or fragments to the stem and the margin of the pileus. This species has not been found since its discovery in 1872. In the Twenty-ninth report its name was changed to *Agaricus magnivelaris*, that it might not conflict with *Agaricus ponderosus* of Persoon; but as that is manifestly a species of *Tricholoma*, the giving of generic value to the subgenera of Fries permits the restoration of the original name to this species.

Armillaria nardosmia, *Ellis.*

NARD-SMELLING ARMILLARIA.

Torr. Bull. Vol. VI, p. 75. *Agaricus rhagadiosus*. Report 33, p. 18.

Pileus fleshy, firm, thick and compact on the disk, thin toward the margin, whitish variegated with brown spots, with a thick, tough and separable cuticle, flesh white; lamellæ crowded, subventricose,

slightly emarginate, whitish; stem solid, fibrous, not bulbous, sheathed below by the brown velvety veil, the annulus narrow, spreading, uneven on the edge; spores subglobose, .00025 in. in diameter.

Pileus about 3 in. broad; stem 1.5 to 3 in. long, 4 to 6 lines thick.

Ground in woods, Suffolk county. September.

This species is perhaps not specifically distinct from the European *Armillaria rhagadiosa*, to which it was referred in the Thirty-third Report, and with the description of which it agrees very closely, but that species is said to grow on trunks of trees, and to have the lamellæ decurrent. This I find only solitary on the ground, with lamellæ merely adnate or subdecurrent and with spores subglobose and about .00025 in. in diameter. No description of the European plant, so far as seen by me, gives the character or dimensions of its spores. Mr. Ellis remarks that the fresh plant has an aromatic odor like spikenard. *A. rhagadiosa* is also said to have a strong aromatic odor.

***Armillaria mellea*, Vahl.**

HONEY-COLORED ARMILLARIA.

Hym. Europ. p. 44. Syl. Fung., Vol. V, p. 80.

Pileus fleshy, rather thin except on the disk, at first hemispherical or subconical, then convex or nearly plane, adorned with numerous hairy squamules, mostly striate on the margin, pale-yellowish, dingy-yellowish or honey-color or reddish-brown, flesh whitish, taste unpleasant; lamellæ subdistant, adnate or decurrent, whitish or pallid, often with rufescent spots when old; stem equal or slightly thickened at the base, stuffed or hollow when old, sometimes floccose-squamose, externally fibrous, pallid or brownish; spores .0003 to .0004 in. long; .0002 to .00025 broad.

Pileus 1 to 6 in. broad; stem 1 to 6 in. long, 3 to 10 lines thick.

Ground and decaying wood. Common. Late summer and autumn.

This species, like many others that are plentiful and have a wide geographical range, is extremely variable. In its mode of growth it is either solitary gregarious or cæspitose. It occurs both on the ground and on decaying wood of various trees, in woods and in cleared lands. It is especially abundant in recent clearings in hilly and mountainous districts, where it often forms large tufts composed of many individuals closely crowded together, growing especially about stumps and prostrate trunks. It is sometimes very small, having a pileus scarcely more than an inch broad, and a stem but an inch or two long. Again, it is of monstrous

size, especially when solitary. Tufts a foot or more in diameter are not at all uncommon. I have seen them so abundant in the Adirondack region that they might easily have been gathered by the bushel.

The pileus is generally adorned with numerous rather small or minute hairy tufts or scales, which are mostly brown or blackish and more dense on the disk than toward the margin. Sometimes they are so crowded on the disk, especially in young plants, that they give a blackish or darker hue to that part of the pileus. In some forms of the species these hairy scales are wanting or they disappear with age, especially in wet weather, thus leaving the pileus glabrous. The margin of the pileus is normally striate, but forms occur in which it is even. *Armillaria laricina* Bolt, has a glabrous pileus with even margin, but it is regarded by Fries as a mere variety of this species, and the figure of *A. mellea*, as given in Berkeley's Outlines, table 4, indicates the correctness of this view. Occasionally the disk is somewhat prominent or subumbonate. In young specimens and in wet weather the pileus is frequently found moist or subhygrophanous. In color it varies from almost white, through intermediate shades, to a dark reddish-brown. The lamellæ are sometimes clearly emarginate, sometimes broadly adnate or even decurrent. They are generally whitish or more or less tinged with yellow. When old they are sometimes stained with brownish-red spots and dusted with the white spores. The stem varies considerably in color. It often assumes a brown or livid-brown color, especially toward the base or when old. Externally it is rather firm and fibrous, but within it is paler, spongy or even hollow. It is sometimes adorned with pale floccose scales, but these are apt to disappear with age. The veil is usually well developed and membranous, and in the mature plant encircles the stem like a spreading collar, but sometimes it is very thin, soon lacerated and somewhat evanescent. Occasionally it is of a webby character as in *Cortinarius*, and it is then more or less fugacious. Thus it is possible to find specimens of this species with the stem destitute of an annulus much to the disgust and perplexity of young students of mycology. In young plants the veil often entirely conceals the lamellæ. It is generally white or whitish, but sometimes it is stained about the edges with greenish yellow or olivaceous. The tomentum at the base of the stem also presents, in some specimens, the same hue.

Abnormal forms of the species sometimes occur. An abortive form consists of whitish irregular subglobose masses of cellular matter without any distinction of stem pileus or lamellæ. This corresponds

to the abortive form of *Clitopilus abortivus*. It grows in company with the normal form. This fungus is regarded as destructive to the wood in which its mycelium lives.

Authors disagree as to its edible qualities. Badham says that it is a nauseous disagreeable fungus, however cooked, and that it is so repugnant to our notions of the savory that few would make a second attempt or get dangerously far in a first dish. Letellier says that all authors have indicated this mushroom as dangerous.

Richon and Rosé say that its taste is styptic and the acidity does not entirely disappear in cooking. The species is edible, but its quality is very indifferent. According to Vittadini it is preserved in vinegar, salt and oil for use in winter and its acidity is lost in cooking.

Gillet says that it has for a long time passed as poisonous and that modern botanists still disagree as to its properties, but in reality it is harmless, though it has an acrid disagreeable taste which disappears in cooking.

Stevenson says it is edible but tough.

Cordier says it is edible and loses its acidity in cooking, but the stems are tough and not used.

Dr. Curtis classes it with the edible species.

I have myself eaten it at different times, both fried and stewed, and always without harm. Though not unpleasant to my taste at the time of eating, it afterwards leaves an unpleasant burning sensation in the throat which lasts a short time.

It is not improbable that such a variable plant may differ somewhat in its properties in different localities and according to its different habitats. Its toughness also may vary according to the age of the specimens and the rapidity of their growth. These differences may account in part for the different estimate which has been made of it. Tastes also differ in different individuals. In my own case, only the pilei of young or barely mature specimens were used.

In the Adirondack region I have seen large tufts of this species without pilei. Some animal of considerable size, probably deer, had eaten the pilei, and recognizing the toughness and unfitness of the stems had left them standing where they grew.

SYNOPSIS OF THE UNITED STATES SPECIES OF ARMILLARIA.

| | |
|-------------------------------|------------|
| Pileus white or whitish | 1 |
| Pileus some other color | 4 |
| 1. Pileus viscid. | A. mucida. |
| 1. Pileus not viscid. | 2 |

- | | | |
|---|----------------|---|
| 2. Pileus adorned with blackish scales..... | A. ramentacea. | |
| 2. Pileus variegated with brown spots..... | A. nardosmia. | |
| 2. Pileus without spots or scales..... | | 3 |
| 3. Annulus broad, persistent..... | A. ponderosa. | |
| 3. Annulus narrow, deciduous..... | A. constricta. | |
| 4. Pileus glabrous..... | | 5 |
| 4. Pileus adorned with hairy squamules..... | A. mellea. | |
| 5. Stem bulbous..... | A. bulbiger | |
| 5. Stem not bulbous..... | A. robusta. | |

(F.)

NEW YORK, December 9, 1889.

CHAS. H. PECK, *State Botanist*:

MY DEAR SIR.—The growth of fungi on railroad ties, bridge, car and station timbers was unusually prolific the past season, with its large rainfall. Therefore a corresponding increase in the rate of decay, the effects of which will be more apparent next year. The fruiting of *Lentinus lepideus* Fr., on ties of yellow pine, *Pinus palustris*, Mill. in main-line tracks was so conspicuous in September, 1889, as to be noticeable from the trains. Pilei six to eight inches in diameter were frequent, while four in a cluster of smaller diameter, springing from the same mycelium, seemed to be a common mode of growth, this unusually wet season. One pileus in a place is the usual manner of growth in the railroad tracks in an ordinary season. The resinous matter in yellow pine in its natural state does not seem to check the growth of this fungus.

Agaricus campanella Batsch. was found on white cedar, *Chamæcyparis sphæroidea* Spack. fruiting from May to October. White Oak, *Quercus alba* L. frequently showed *Polyporus applanatus* Fr. in fruit, while *Polyporus versicolor* Fr. was very abundant. The absence of fungi in fruit upon ties of chestnut, *Castanea vulgaris* var. *Americana* A. D. C. was as striking as its frequency was on other woods. It is a well-known fact that chestnut ties last longer where the ground is damp, than where it is dry. It will be important to observe next year whether the excessive rain of this season has retarded or increased the usual rate of decay in ties of chestnut. One fact is established now; that the wood has been softened by the rain and the abrasion under the rails increased. On the railroad bridges the fungus *Lenzites sepiaria* Fr. has been abundant and destructive. Under the station platforms and the planking of the walks the development of mycelium, generally without fruiting, has been more abundant than usual. It has not, however, set men to thinking as it should, and the

replanking has been done as of old, that is, in the best manner to promote the growth of a new crop of fungi to destroy the planks in a year or two. The season has been so favorable to the growth of mycelium that unseasoned timbers, used for the construction of freight cars, though dressed and framed, but closely piled in the shop one or two weeks, awaiting erection, would show traces of a developing mycelium. The strength of the pieces would not be impaired in so short a time, and little notice would be taken of the presence of the mycelium. If the timber finally seasons the mycelium becomes inert and will not revive till moisture reaches it. This would again start decay. If the unseasoned wood is painted and the moisture retained, the mycelium will continue to grow, causing partial or complete decay in the wood. This was clearly shown in the examination of several hundred freight cars undergoing repairs. Internal growth of fungi had taken place in heavy timbers which were thereby weakened and so quickly failed in service. A general impression prevails that timbers only need protection from external decay. Careful microscopical study reveals the fact that nearly every stick of timber contains in the crevices or on the surface a sufficient number of spores or traces of mycelium to induce decay when painted, unless the wood is well seasoned or properly treated. In New York city, timbers have been put in houses and other buildings and covered with tar or tarred paper, which caused their decay in three to four years. Notably, an apartment house was so badly injured by the development of fungi in the large timbers covered by tarred paper, that it had to be taken down in the fourth year of its use. Buildings eight to eleven stories high, in which every floor will be heated to seventy degrees or more in the winter, furnish a temperature sufficient for the growth of the most destructive fungi for the entire year. Unless the timbers are seasoned or properly treated, the fungi will grow and cause the decay of the wood. These fungi have so long been considered the accompaniment of the decay of the wood, instead of the *cause* thereof, that by the majority of the users of wood the true functions of the fungi are not understood.

In view of the fact that the State finds it necessary to take active measures to preserve our rapidly decreasing forests, it seems to me it might with propriety take active measures to call attention to the destruction caused by fungi in timber and so check what is now a great and unnecessary waste. Many of the means of doing this are simple and inexpensive, as stated in my letter of December 5, 1887.

As an illustration of simple and effective measures, I will give an example: When I was chief engineer of the Valley Railway of Ohio,

I built some extensive trestles. This was in 1873. Before doing so I examined a number of trestles near Cleveland, Ohio, built of 10 by 12 or 12 by 12 timbers, the life of which did not exceed seven or eight years. In examining them I found that while the large timbers were sound upon the outside, internally they were all decayed. The small timbers, 6 by 8, used for braces and of the same kind of wood, were sound. *The small size enabled them to season in the structure.* This was an important fact, so I made all of my timbers small, using more of them to give the proper factor of safety. One of those trestles is in use now, 1889. In this case one of the three essentials requisite for the growth of fungi was eliminated, namely, the moisture in the interior. Decay could not, therefore, take place. The first step to be taken in this important matter has already been, in great measure, done by you, namely, the collection of specimens and the classification of the species of fungi. This, supplemented by a series of specimens showing how the wood is destroyed, would form the basis of one of the most important and economic departments of the State Museum. The second step would be the dissemination of this knowledge to the railroad companies and other consumers of wood.

Yours truly,

P. H. DUDLEY.

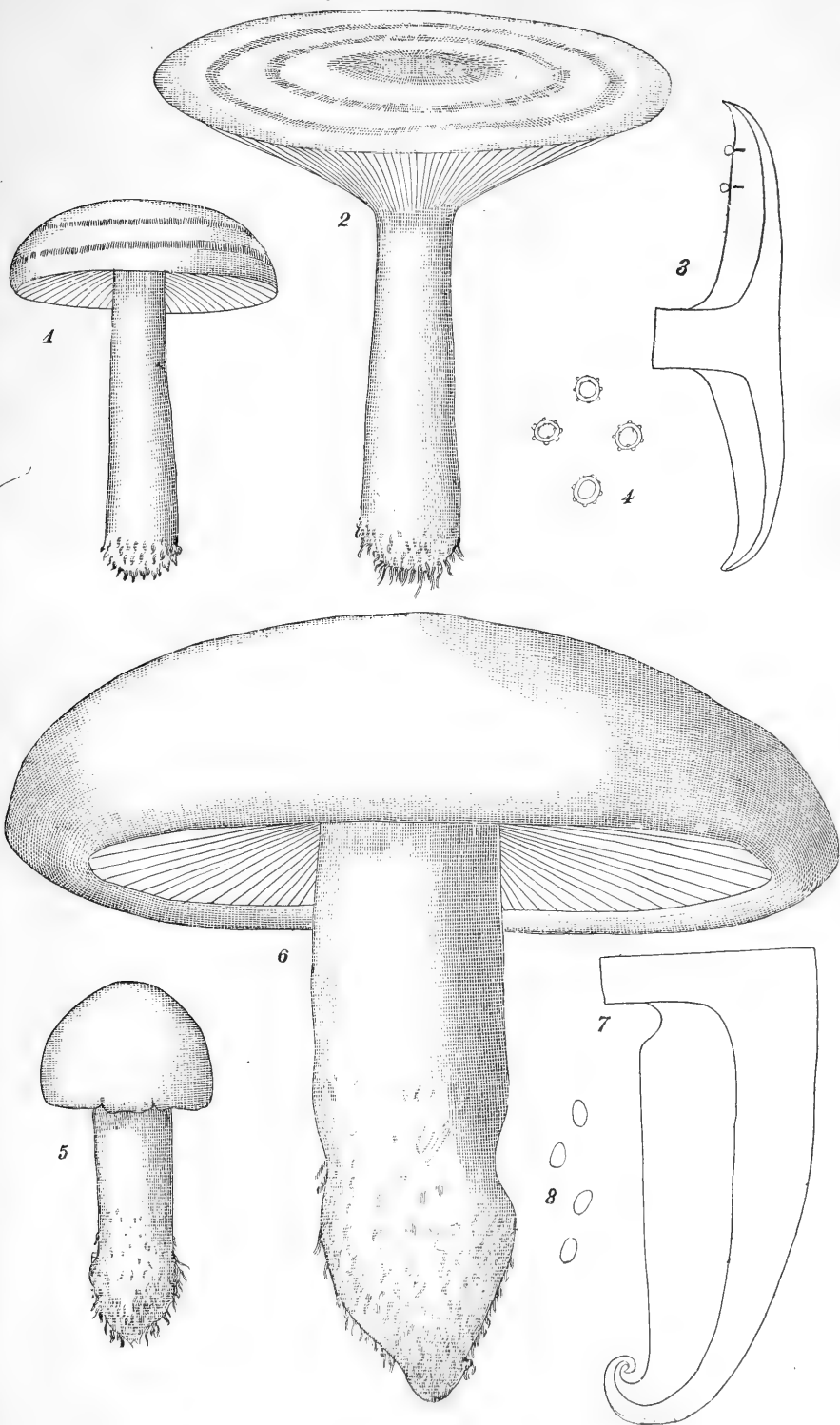
EXPLANATION OF PLATE 1.

LACTARIUS MUTABILIS, *Peck.*

- Fig. 1. An immature plant.
- Fig. 2. A mature plant.
- Fig. 3. Vertical section of a pileus and upper part of its stem.
- Fig. 4. Four spores $\times 400$.

TRICHOLOMA GRAVE, *Peck.*

- Fig. 5. An immature plant.
- Fig. 6. A mature plant. •
- Fig. 7. Vertical section of one-half a pileus.
- Fig. 8. Four spores $\times 400$.



EXPLANATION OF PLATE 2.

CORTINARIUS ANNULATUS, *Peck.*

- Fig. 1. An immature plant.
Fig. 2. A mature plant.
Fig. 3. Vertical section of a pileus and upper part of its stem.
Fig. 4. Four spores $\times 400$.

RUSSULA BREVIPES, *Peck.*

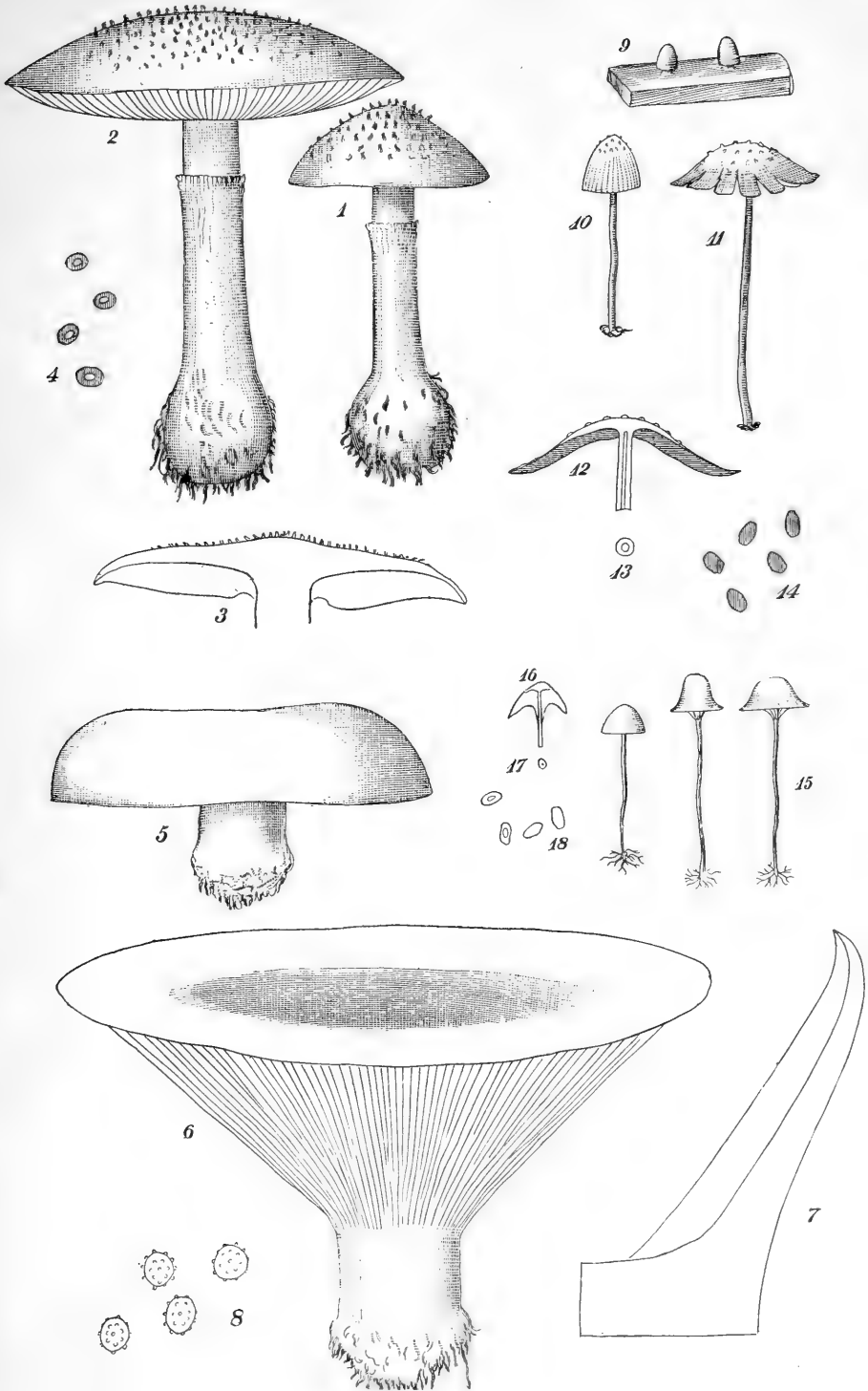
- Fig. 5. An immature plant.
Fig. 6. A mature plant.
Fig. 7. Vertical section of half a pileus.
Fig. 8. Four spores $\times 400$.

COPRINUS BRASSICÆ, *Peck.*

- Fig. 9. Fragment of stem bearing two very young plants.
Fig. 10. A plant with the pileus unexpanded.
Fig. 11. A plant with the pileus expanded.
Fig. 12. Vertical section of a pileus and upper part of its stem enlarged.
Fig. 13. Transverse section of a stem enlarged.
Fig. 14. Five spores $\times 400$.

MARASMIUS ALBICEPS, *Peck.*

- Fig. 15. Three plants showing different forms of the pileus.
Fig. 16. Vertical section of a pileus and upper part of its stem.
Fig. 17. Transverse section of stem.
Fig. 18. Four spores $\times 400$.





EXPLANATION OF PLATE 3.

COMATRICHA LONGA, Peck.

- Fig. 1. Piece of wood bearing a tuft of the plants.
Fig. 2. Upper part of a columella and capillitium enlarged.
Fig. 3. Lower part of a stem and fragment of hypothallus enlarged.
Fig. 4. Small fragment of the columella and capillitium x 400.
Fig. 5. Four spores x 400.

COMATRICHA SUBCESPITOSA, Peck.

- Fig. 6. Piece of wood bearing four clusters of the plants.
Fig. 7. A plant after its spores have fallen, enlarged.
Fig. 8. Small fragment of the capillitium x 400.
Fig. 9. Four spores x 400.

STACHYBOTRYS ELONGATA, Peck.

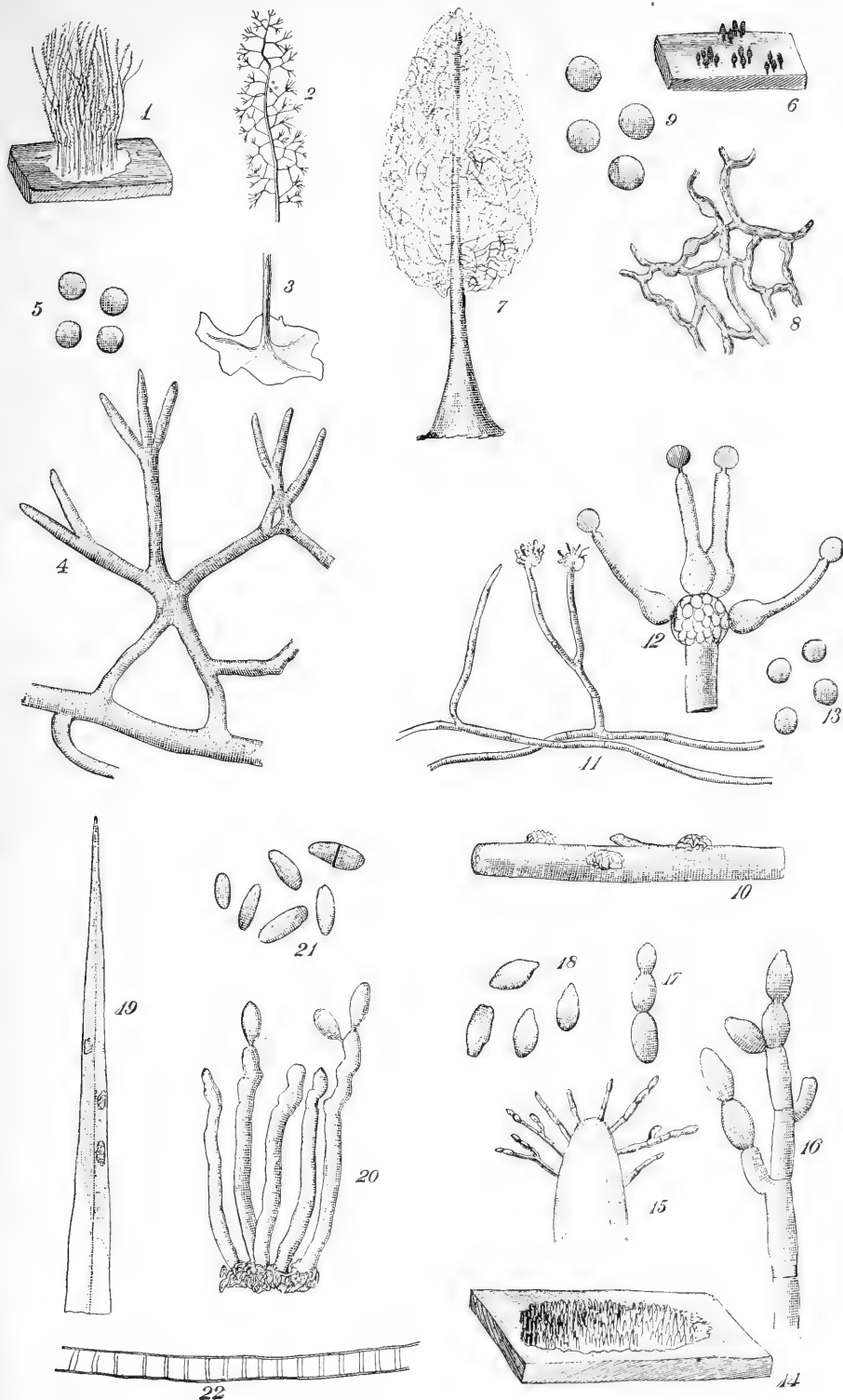
- Fig. 10. Piece of branch bearing three tufts of the plants.
Fig. 11. Fragments of hyphæ, one bearing two heads of spores, enlarged.
Fig. 12. Apex of a fertile hypha partly denuded, four sporophores with their spores remaining x 400.
Fig. 13. Four spores x 400.

DEMATIUM PARASITICUM, Peck.

- Fig. 14. Piece of wood bearing the Hydnum, a part of whose aculei are blackened by the parasite.
Fig. 15. An aculeus with eight hyphæ of the parasite, enlarged.
Fig. 16. A hypha bearing five spores x 400.
Fig. 17. A chain of three spores x 400.
Fig. 18. Four spores x 400.

FUSICLADIUM DESTRUENS, Peck.

- Fig. 19. Upper part of a leaf bearing three clusters of the fungus.
Fig. 20. Five hyphæ, two of them bearing spores x 400.
Fig. 21. Six spores x 400.
Fig. 22. A fragment of mycelium x 400.



EXPLANATION OF PLATE 4.

UNDERWOODIA COLUMNARIS, Peck.

- Fig. 1. A mature plant.
Fig. 2. Transverse section of a plant.
Fig. 3. A paraphysis and an ascus with its spores $\times 400$.
Fig. 4. Three spores $\times 400$.

HEMATOMYCES FAGINEA, Peck.

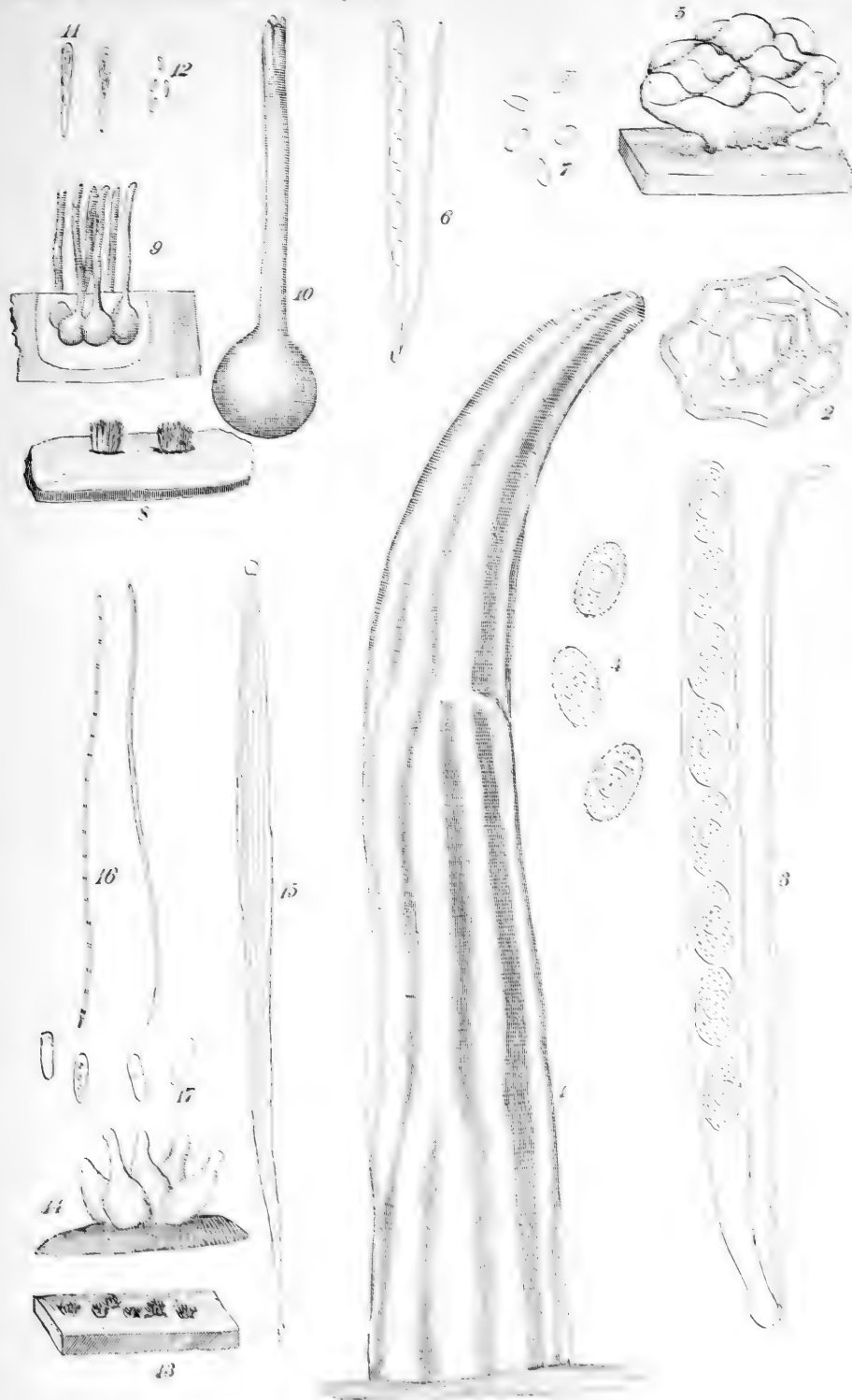
- Fig. 5. Piece of wood bearing the fungus.
Fig. 6. A paraphysis and an ascus with its spores $\times 400$.
Fig. 7. Five spores $\times 400$.

EUTYPELLA LONGIROSTRIS, Peck.

- Fig. 8. Piece of bark bearing two clusters of the fungus.
Fig. 9. Vertical section through a cluster, enlarged.
Fig. 10. A perithecium and its ostiole, enlarged.
Fig. 11. Two asci with their spores $\times 400$.
Fig. 12. Four spores $\times 400$.

BARTIA PARASITICA Peck. var. *CAESPITOSA* Peck.

- Fig. 13. Piece of wood bearing six clusters of the fungus.
Fig. 14. A cluster of five perithecia, enlarged.
Fig. 15. An ascus with its spores $\times 400$.
Fig. 16. Two spores $\times 400$.
Fig. 17. Four conidia $\times 400$.



[FROM THE 44th REPORT OF THE NEW YORK STATE MUSEUM OF NATURAL HISTORY]

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ANNUAL REPORT

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STATE BOTANIST

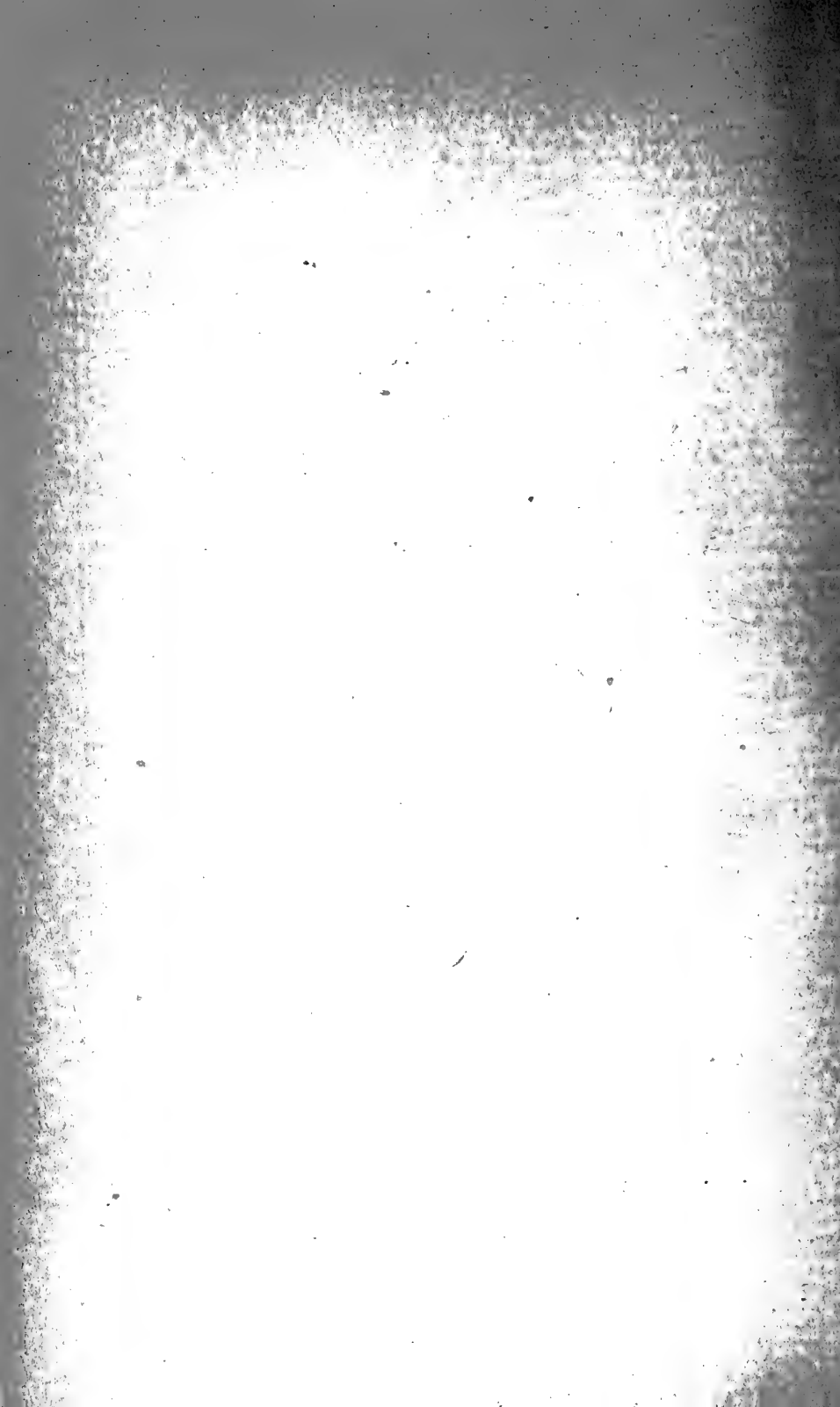
OF THE

STATE OF NEW YORK. 1890

Made to the Regents of the University, Pursuant to
Chapter 355 of the Laws of 1883.

BY CHARLES H. PECK.

ALBANY:
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STATE OF NEW YORK.

No. 77.

IN SENATE,

JANUARY 31, 1891.

ANNUAL REPORT

OF THE

STATE BOTANIST.

OFFICE OF THE STATE BOTANIST, }
ALBANY, *January* 31, 1891. }

*To the Honorable the Regents of the University of the State of
New York:*

I have the honor to present to you my annual report for
the year 1890.

Very respectfully.

CHARLES H. PECK.



REPORT.

To the Regents of the University of the State of New York:

GENTLEMEN.—I have the honor of communicating to you the following report:

Specimens of plants for the State Herbarium have been collected and prepared by the Botanist during the past year in the counties of Albany, Columbia, Cattaraugus, Dutchess, Essex, Greene, Hamilton, Oneida, Oswego, Putnam, Rensselaer, Steuben and Warren.

Specimens contributed by correspondents have been collected in the counties of Dutchess, Onondaga, Ontario, Orleans, Oswego, St. Lawrence and Westchester.

Specimens of 269 species of plants have been added to the Herbarium, of which 254 were collected by the Botanist and 15 were contributed. Of the former 72 are new to the Herbarium, of the latter 11. The number of species represented in the Herbarium has, therefore, been increased by 83. Of the remaining 186 species, the specimens represent forms or varieties not before represented or not well shown, or are specimens intended to accompany the trunk sections now being made of the trees of the State. Among the species not before represented in the Herbarium are 36 species of fungi considered new to science and described as such in another part of this report. A list of the species of which specimens have been added to the Herbarium is marked A.

It seems desirable that the examples of trunk sections of the trees of the State, now being collected, should be accompanied by specimens of a branch or branches bearing the leaves, flowers and fruit. These, when properly labeled, mounted and placed with their respective wood sections, will make the illustration of the character of the tree much more complete and will afford a material aid to the student and the public in acquiring a familiar knowledge of the trees of the State and their names. Specimens have been collected representing 26 species of our trees. The names of these constitute the last 26 names in the list marked A.

Specimens of plants have been contributed by 22 contributors. Among these contributions are many extra limital species not

included in the foregoing enumeration. A list of the contributors and of their respective contributions is marked B.

The record of species not before reported, together with their respective localities, habitats, and time of collection, also remarks concerning them and descriptions of new species, is marked C.

Remarks concerning species previously reported, a record of new localities of rare plants and descriptions of peculiar forms or varieties are contained in a subdivision marked D.

The genus *Tricholoma* is a large one, numbering, according to *Sylloge Fungorum*, 187 species. It is at present represented in this State by 48 species. Some of these are variable in size and color, and others are so similar to each other in general appearance that they are not identified without difficulty. A collation and revision of the descriptions of our New York species and a systematic arrangement of them has seemed desirable. This I have attempted to do, following the plan previously adopted in reference to several other genera of *Agaricini*. Synoptical tables of the different groups of species have been prepared to facilitate the tracing of the species, the descriptions have been revised and in many cases made more complete, and remarks have been added to some of these for the purpose of pointing out more clearly the distinguishing characters. It is believed that these will in nearly all cases enable the student to identify the species with rapidity and accuracy. This monograph of the New York species of *Tricholoma* is marked E.

Mary E. Banning, of Baltimore, Maryland, has for several years been engaged in studying the fleshy fungi of Maryland. Of most of them she has made drawings of the living plant and written descriptions of the species, to which in many cases remarks concerning her own observations of their habits, peculiarities and edible qualities have been added. The figures are beautifully painted by hand in water colors. They are natural size, life-like in expression and accurate in detail. They are on sheets 12 by 15 inches, thus permitting a full size illustration of even the large species. Each plate is devoted to a single species or variety. Generally both the young and the mature plant have been figured and a vertical section of a plant. The specimen has been placed in such positions that both the upper and lower surfaces of the pileus may be seen. Most of the species figured belong to the *Hymenomycetes* and *Gasteromycetes*. The whole number of species recorded in her list is 179. Of these, 151 have been illustrated on 175 plates, two or more plates being in some instances devoted to one species in

order to show its different varieties. Of the figured species, 14 are described as new. These plates and their accompanying manuscript descriptions have been bound in one large volume with manuscript dedication, preface and index. This volume is one of much value and merit, and though it has evidently cost its author an immense amount of labor and study she has most generously presented it to the New York State Museum, in order that, as she says, it may be kept where it will be the most useful, thereby acknowledging by implication the importance of this institution as a repository and source of mycological information. As a mark of appreciation of this munificent gift it has seemed to me most fitting that this list of Maryland fungi and the descriptions of the new species should be transcribed for publication in this report that they may in this way be made still more accessible to the mycological student and the public. The list with the descriptions of new species is marked F.

I have from time to time recorded in previous reports examples of herbs and shrubs coming under my observation and illustrating the general principle that feeble, starved or unthrifty plants are more liable to the injurious attacks of parasitic fungi than other plants of the same species growing under more favorable circumstances and possessing more vigor. I am able now to cite an illustration of this principle in the attacks of parasitic fungi on trees. Many small spruce trees are growing on the marsh just north of Kasoag, Oswego county. These have a starved, unthrifty appearance. Their growth is very slow and their leaves as a rule are scarcely more than half as long as those of vigorous healthy spruces. Their feeble condition is manifestly due to the character of the soil in which they grow. It is low, wet, undrained and peaty. There is probably a scarcity of the necessary mineral constituents, and the roots of the trees are too much of the time immersed in standing water. In the midst of the marsh, but on higher and therefore better drained land, other spruces grow. These trees are larger, though probably not older, and they have a more vigorous and healthy appearance. Their leaves are of the usual size and color. So far as could be ascertained they are subject to the same conditions, soil excepted, as those that grow in the lower marsh land around them. In July, when I visited this locality, the foliage of the trees in the marsh land was much discolored and badly affected by a parasitic fungus, *Peridermium decolorans*. There was scarcely a tree that had not been invaded by it. At the same time the more vigorous spruces on the higher

land were wholly free from it. The unavoidable conclusion is that their better health and greater vigor afforded them protection against this parasite. Among the noteworthy additions to our State flora may be mentioned a remarkable and very ornamental rarity of the common polypod fern. It is not recorded in Eaton's Ferns of North America, and so far as known it has not before been found in this country. Its botanical name is *Polypodium vulgare* L. var. *cristatum*, Lowe. Because of its singular character and its rarity I have given a figure and a more full account of it in its appropriate place in this report.

A new fungus of special interest, because of its peculiar habitat, has also been brought to light. It is a species of mold which I have called *Aspergillus aviarius*. It was found inside the body of a canary bird, the death of which it apparently caused. It helps to illustrate the fact that there is scarcely a place in which or a substance on which fungi of some sort may not grow. A full description of this species has been given in another place.

Very respectfully

CHAS. H. PECK

ALBANY, November 29, 1890

A

PLANTS ADDED TO THE HERBARIUM

New to the Herbarium

- Ranunculus circinatus* Sibth.
Lychnis Floscuculi L.
Spiræa sorbifolia L.
Rosa cinnamomea L.
Prunus Persica L.
Pyrus Aucuparia Gært.
Epilobium glandulosum Lehm.
Digitalis purpurea L.
Clintonia umbellata Torr.
Buxbaumia indusiata Brid.
Lejeunia calcarea Lib.
Frullania dilatata Nees.
Armillaria viscidipes Pk.
Tricholoma grande Pk.
T. sordidum Fr.
Clitocybe rivulosa Pers.
C. fuscipes Pk.
Collybia expallens Pk.
Mycena pseudopura Cke.
Omphalia corticola Pk.
Pleurotus pubescens Pk.
P. campanulatus Pk.
Flammula squalida Pk.
Pluteolus reticulatus Pers.
Crepidotus distans Pk.
Cortinarius albidus Pk.
Hygrophorus penarius Fr.
Coprinus picaceus Fr.
Polyporus annosus, Fr.
Dædalea sulphurella Pk.
D. extensa Pk.
Hydnum caput-ursi Fr.
H. arachnoideum Pk.
Odontia tenuis Pk.
Mucronella minutissima Pk.
Thelephora odorifera Pk.
Porothelium fimbriatum Fr.
Cyphella arachnoidea Pk.
Geaster rufescens Pers.
Phyllosticta Ludwigia Pk.
Phoma sordida Sacc.
Dothiorella Celtidis Pk.
- Sphæroopsis Ellisii* Sacc.
S. rubicola C. & E.
Diplodia Liriodendri Pk.
D. multicarpa Pk.
Hendersonia epileuca R. & C.
Septoria Pteridis Pk.
Melanconium zonatum E. & E.
Septomyxa Carpini Pk.
Pestalozzia lignicola Cke.
Puccinia Spergulæ DC.
Doassansia Sagittariæ Fisch.
Aspergillus aviarius Pk.
Sporotrichum Lecanii Pk.
Diplosporium breve Pk.
Didymaria Ungerii Cd.
Ramularia destruens Pk.
R. Junci Pk.
R. graminicola Pk.
R. Heraclei Sacc.
Cercospora Veratri Pk.
Bispora effusa Pk.
Cladosporium entoxylinum Cd.
Septonema episphaericum Pk.
Coniothecium effusum Cd.
Epicoccum vulgare Cd.
E. diversisporum Preuss.
Valsa microstoma Fr.
V. coöperta Cke.
Eutypella cerviculata Sacc.
Diaporthe binocolata Sacc.
D. tuberculosa Sacc.
D. rostellata Nitsch.
D. Americana Speg.
Massaria epileuca B. & C.
Caryospora minor Pk.
Metasphaeria nuda Pk.
Pleospora Asparagi Reb.
Lophiostoma vagans Fab.
Stictis minuscula Karst.
Pseudopeziza Pyri Pk.
Saccharomyces Betulæ Pk. & Pat.

Not new to the Herbarium

- Ranunculus sceleratus* L.
R. ambigenus Wats.
Thalictrum purpurascens L.
Cimicifuga racemosa Nutt.
Nymphaea odorata Ait.
Corydalis flavula DC.
Dicentra cucullaria DC.
Sanguinaria Canadensis L.
Viola sagittata Ait.
Brassica campestris L.
Raphanus sativus L.
Lêchea minor L.
Stellaria media Sm.
Lychnis vespertina Sibth.
Linum Virginianum L.
Rubus villosus Ait.
R. hispidus L.
R. triflorus Rich.
Potentilla tridentata Ait.
Spiraea salicifolia L.
Nesaea verticillata H. B. K.
Oenothera pumila L.
Sedum ternatum Mx.
Heuchera Americana L.
Cicuta maculata L.
C. bulbifera L.
Angelica hirsuta L.
Aralia racemosa L.
Galium triflorum Mx.
Viburnum pauciflorum Pyle.
Symphoricarpos racemosus Mx.
Solidago sempervirens L.
S. nemoralis Ait.
S. arguta Ait.
Aster macrophyllus L.
A. Novæ-Angliæ L.
A. undulatus L.
A. sagittifolius Willd.
A. multiflorus Ait.
A. paniculatus Lam.
A. Novi-Belgii L.
A. prenanthoides Muhl.
A. vimineus Lam.
Senecio vulgaris L.
Erigeron Canadensis L.
Cacalia suaveolens L.
C. atriplicifolia L.
Antennaria plantaginifolia Hook.
Prenanthes serpentaria Pursh.
Rudbeckia triloba L.
Lobelia spicata Lam.
Plantago lanceolata L.
Verbascum Blattaria L.
V. Lychnitis L.
Gerardia tenuifolia Vahl.
Stachys aspera Mx.
Monarda didyma L.
Pycnanthemum lanceolatum Pursh.
Brunella vulgaris L.
Myosotis laxa Lehm.
Onosmodium Virginianum DC.
O. Carolinianum DC.
Phlox maculata L.
Gentiana linearis Frœl.
Asclepias phytolaccoides Pursh.
Vincetoxicum nigrum Moench.
Lycium vulgare Dunal.
Rumex obtusifolius L.
R. crispus L.
Polygonum hydropiperoides Mx.
Fraxinus pubescens Lam.
Calla palustris L.
Typha latifolia L.
Alisma Plantago L.
Smilax herbacea L.
Epipactis Helleborine Crantz.
Calopogon pulchellus R. Br.
Chamælirium Carolinianum Willd.
Habenaria psychodes Gray.
Juncus effusus L.
J. filiformis L.
J. acuminatus Mx.
J. marginatus Rostk.
Scirpus Smithii Gray.
S. atrovirens Muhl.
Eriophorum gracile Koch.
E. Virginicum L.
Eleocharis intermedia Schultes.
Carex folliculata L.
C. monile Tuck.
C. retrorsa Schw.
C. crinita Lam.
C. triceps Mx.
C. flava L.
C. laxiflora Lam.
C. Tuckermani Dew.
C. vulpinoidea Mx.
C. vitilis Fr.
C. straminea Willd.
C. lupulina Muhl.
C. utriculata Boott.
Phalaris arundinacea L.

- Bromus secalinus L.*
B. ciliatus L.
Asprella Hystrix Willd.
Polypodium vulgare L.
Equisetum hyemale L.
Riccia fluitans, L.
Amanita rubescens Fr.
Lepiota rhacodes Vitt.
Tricholoma Peckii Howe.
T. terreum Schæff.
T. album Schæff.
T. chrysenteroides Pk.
Clitocybe cyathiformis Fr.
Collybia velutipes Curt.
C. Familia Pk.
Mycena pterigena Fr.
Pleurotus applicatus Batsch.
P. sulphureoides Pk.
P. striatulus Fr.
Entoloma cyaneum Pk.
Pholiota discolor Pk.
Hebeloma crustulipiforme Bull.
Flammula spumosa Fr.
Crepidotus dorsalis Pk.
Agaricus silvicola Vitt.
Stropharia squamosa Fr.
Psilocybe spadicea Fr.
Cortinarius collinitus Fr.
Hygrophorus splendens Pk.
H. pratensis Fr.
Lactarius atroviridis Pk.
Russula variata Banning.
Cantharellus lutescens Fr.
Polystictus conchifer Schw.
Poria sanguinolenta Fr.
Dædalea unicolor Fr.
Irpex Tulipiferae Schw.
Craterellus clavatus Fr.
Stereum bicolor Fr.
S. ochraceoflavum Schw.
Corticium Oakesii B. & C.
Coniophora puteana Fr.
Tremella mesenterica Retz.
Comatricha Friesiana Rost.
Enerthenema papillatum Rost.
Doassansia Alismatis Corn.
Cercospora varia Pk.
Ramularia lineola Pk.
R. variabilis Eckl.
Zygodesmus fuscus Cd.
Bactridium flavum K. & S.
Glæosporium lagenarium Pass.
Tuberculina persicina Sacc.
Underwoodia columnaris Pk.
Vibrissia truncorum Fr.
Peziza chlora Schw.
Propolis faginea Karst.
Melogramma vagans DeNot.
Magnolia acuminata L.
Acer rubrum L.
Amelanchier Canadensis T. & G.
Ulmus fulva Mx.
U. Americana L.
Celtis occidentalis L.
Morus rubra L.
Platanus occidentalis L.
Nyssa sylvatica Marsh.
Fraxinus pubescens Lam.
Carya amara Nutt.
Betula lenta L.
B. lutea Mx.
B. populifolia Ait.
B. papyrifera Marsh.
B. nigra L.
Quercus alba L.
Q. macrocarpa Mx.
Q. rubra L.
Q. coccinea Wang.
Q. palustris DuRoi.
Fagus ferruginea Ait.
Populus-monilifera Ait.
Pinus resinosa Ait.
Thuya occidentalis L.
Juniperus Virginiana L.

(B)

CONTRIBUTORS AND THEIR CONTRIBUTIONS

- Mrs. E. C. Anthony, Gouverneur, N. Y.
Geaster rufescens Pers. | *Tulostoma mammosum Fr.*
 Mrs. L. L. Goodrich, Syracuse, N. Y.
Epipactis Helleborine Crantz. | *Selaginella apus Spring,*
 Mrs. E. B. Smith, Coeymans, N. Y.
Xylaria Hypoxylon var. pedata Fr.

Mrs. W. H. Fitch, Norwich, N. Y.

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| <i>Aconitum Noveboracense</i> Gr. | <i>Cacalia suaveolens</i> L. |
| <i>Liatris spicata</i> Willd. | <i>Erythronium albidum</i> Nutt. |

Miss P. A. McCabe, White Plains, N. Y.

| | |
|----------------------------------|-------------------------------------|
| <i>Caucalis Anthriscus</i> Huds. | <i>Pentstemon lævigatus</i> Soland. |
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Mrs. E. G. Britton, New York, N. Y.

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| <i>Andræa petrophila</i> Ehrh. | <i>Timmia austriaca</i> Hedw. |
| <i>Georgia geniculata</i> Girg. | <i>Scouleria aquatica</i> Hook. |
| <i>G. pellucida</i> Rabh. | <i>Catharinea Selwyni</i> Britton. |
| <i>Fissidens rufulus</i> B. & S. | <i>Bartramia Menziesii</i> Turn. |
| <i>F. grandifrons</i> Brid. | <i>B. Oederiana</i> Sw. |
| <i>F. Hallianus</i> Mitt. | <i>B. pomiformis</i> Hedw. |
| <i>Dicranum strictum</i> Schleich. | <i>Philonotis fontana</i> Brid. |
| <i>D. Starkii</i> W. & M. | <i>Neckera pennata</i> Hedw. |
| <i>D. fuscescens</i> Turn. | <i>Climacium Americanum</i> Brid. |
| <i>Dicranella crispa</i> Schp. | <i>C. dendroides</i> W. & M. |
| <i>D. secunda</i> Lindb. | <i>Hypnum riparium</i> L. |
| <i>Blindia acuta</i> B. & S. | <i>H. proliferum</i> L. |
| <i>Hedwigia ciliata</i> Ehrh. | <i>H. crista-castrensis</i> L. |
| <i>Orthotrichum cupulatum</i> Hoffm. | <i>H. megaptilum</i> Sull. |
| <i>Leucobryum vulgare</i> Hampe. | <i>Alsia abietina</i> Sull. |
| <i>Grimmia heterosticha</i> C. & M. | <i>Thamnum Bigelovii</i> Sull. |
| <i>G. canescens</i> C. & M. | <i>Plagiothecium latebricola</i> Lindb. |
| <i>G. patens</i> B. & S. | <i>P. turfaceum</i> Lindb. |
| <i>G. hypnoides</i> Lindb. | <i>P. Müllerianum</i> , Schp. |
| <i>G. torquata</i> Hornsch. | <i>P. elegans</i> Schp. |
| <i>G. apocarpa</i> Hedw. | <i>Rhytidium robustum</i> Hook. |
| <i>Braunia Californica</i> Lesq. | <i>Hylocomium triquetrum</i> B. & S. |
| <i>Anoetangium Lapponicum</i> Hedw. | <i>H. squarrosus</i> B. & S. |
| <i>A. Mougeottii</i> Lindb. | <i>H. loreum</i> B. & S. |
| <i>Swartzia montana</i> Lindb. | <i>H. parietinum</i> Lindb. |

Miss M. E. Banning, Baltimore, Md.

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| <i>Lycoperdon cælatum</i> Bull. |
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W. M. Beauchamp, Baldwinsville, N. Y.

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| <i>Nicotiana rustica</i> L. |
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Smith E. Jelliffe, M. D., Brooklyn, N. Y.

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| <i>Atrichum crispum</i> James. | <i>Homalia trichomanoides</i> B. & S. |
| <i>Neckera oligocarpa</i> B. & S. | <i>Asplenium montanum</i> Willd. |

Thomas Taylor, M. D., Washington, D. C.

| | |
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| <i>Rhizopogon rubes. v. Vittadini</i> Tul. | <i>Calostoma Berkeleyi</i> Massee. |
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W. W. Rowlee, Ithaca, N. Y.

| | |
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| <i>Ranunculus circinatus</i> Sibth. | <i>Spiræa sorbifolia</i> L. |
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Moses Craig, Ithaca, N. Y.

| | |
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| <i>Æcidium Euphorbiæ</i> Gmelin. | <i>Puccinia Menthæ</i> Pers. |
| <i>Æ. gnaphaliatum</i> Schw. | <i>P. coronata</i> Cd. |
| <i>Æ. Caladii</i> Schw. | <i>P. Podophylli</i> Schw. |
| <i>Æ. Iridis</i> Ger. | |

C. L. Shear, Stockbridge, Mass.

Lychnis Flos cuculi L.

S. C. Bradt, Albany, N. Y.

Æcidium Clematidis DC.

Arthur Claghorn, New Harbor, Newfld.

Empetrum nigrum L.

Charles A. Coons, Valatie, N. Y.

Polypodium vulgare L., var. *cristata* Lowe.

Rev. F. D. Kelsey, Helena, Mont.

Omphalodes Howardi Gr.*Douglasia montana* Gr.*Lithospermum angustifolium* Mx.*Phragmidium subcorticium* Wint.*Puccinia Grindelie* Pk.P. *Tanaceti* DC.P. *flosculosorum* Ræhl.P. *Phragmitis* Korn.*Uromyces Spragueæ* Hark.U. *Trifolii* Lev.*Æcidium Glaucis* D. & M.Æ. *Plantaginis* Ces.Æ. *gaurinum* Pk.*Melampsora Epilobii* Wint.*Melampsorella Cerastii* Schr.*Exidia glandulosa* Fr.*Cucurbitaria Kelseyi* E. & E.*Ramularia arnicalis* E. & E.*Entyloma compositarum* Farl.*Phoma Mamillariæ* Web.*Asteroma ribicolum* E. & E.*Dimerosporium Populi* E. & E.*Valsa nivea* Fr.V. *boreëlla* Karst.*Uncinula adunca* Lev.*Phyllactinia suffulta* Sacc.*Erysiphe communis* Wallr.E. *Cichoracearum* DC.

C. E. Fairman, M. D., Lyndonville, N. Y.

Pleurotus pubescens Pk.*Diplodia spiræicola* E. & E.*Pestalozzia insidens* Zab.*Melanconium zonatum* E. & E.*Coniosporium Fairmani* Sacc.*Cyphella Tiliæ* Cke.*Tubulina cylindrica* Bull.*Fenestella amorpha* E. & E.*Cenangium rubiginellum* Sacc.

L. M. Underwood, Syracuse, N. Y.

Corydalis flavula DC.*Riccia fluitans* L.R. *lutescens* Schw.R. *Donnellii* Aust.R. *crystallina* L.*Preissia hemisphærica* Cogn.*Notothylas orbicularis* Sulliv.*Lunularia vulgaris* Mich.*Fimbriaria tenella* Nees.*Thallocarpus Curtisii* Lindb.*Aneura pinguis* Dum.A. *pinnatifida* Nees.A. *latifrons* Lindb.A. *multifida* Dum.*Pellia epiphylla* Nees.P. *endivæfolia* Dum.*Fossombronina Dumortieri* Lindb.*Metzgeria conjugata* Lindb.M. *pubescens* Rad.*Lejeunia calcarea* Lib.*Lejeunia clypeata* Sulliv.*Frullania Eboracense* Gott.F. *Virginica* Lehm.F. *Bolanderi* Aust.F. *Oakesiana* Aust.F. *dilatata* Nees.*Radula spicata* Aust.R. *tenax* Lindb.*Porella Bolanderi* Aust.P. *platyphylla* Lindb.P. *navicularis* Lindb.*Blepharostoma tricophylla* Dum.*Ptilidium Californicum* Aust.*Bazzania deflexa* Mart.*Chiloscyphus polyanthos* Cd.*Lophocolea heterophylla* Nees.L. *Leibergii* Under.*Odontoschisma Sphagni* Dum.*Harpanthus scutatus* Spruce.*Jungermannia setiformis* Ehrh.

Jungermannia barbata Schreb.
J. minuta Crantz.
J. inflata Huds.
J. incisa Schrad.
J. exsecta Schmidt.
Cephalozia multiflora Spruce.
C. divaricata Dum.
C. bicuspidata Dum.
C. Virginiana Spruce.
Mylia Taylori Gray.
Diplophyllum albicans Dum.
Gymnomitrium concinnum Cd.
Scapania undulata N. & M.

Scapania Bolanderi Aust.
S. glaucocephala Aust.
Nardia crenulata Lindb.
N. fossombronioides Lindb.
Marsupella emarginata Dum.
M. sphacelata Dum.
Sphærocarpus terrestris Mich.
S. Donnellii Aust.
Polyporus fuscocarneus Pers.
Thelephora odorifera Pk.
Peniophora unicolor Pk.
Underwoodia columnaris Pk.

J. Dearness, London, Can.

Phyllosticta Apocyni Trel.
P. variegata E. & E.
Ascochyta Thaspiae E. & E.
Melasmia Galii E. & E.
Steganosporium celluloseum Cd.
S. pyriforme Hoffm.
Physoderma Menyanthis DeBy.
Puccinia microsperma E. & E.
Boletus spectabilis Pk.

Septoria Kalmiae C. & E.
S. bacilligera Wint.
S. carnea E. & E.
S. Dearnessii E. & E.
Ramularia Solidaginis E. & E.
R. stolonifera E. & E.
Gnomonia fimbriata Pers.
Asterina rubicola E. & E.

S. M. Tracy, Agricultural College, Miss.

Uredo Fici Cast.
Phragmidium subcorticium Wint.
Puccinia Anthoxanthi Fekl.
P. solida Schw.
P. emaculata Schw.
P. fragilis Tr. & G.
P. Lobeliae Ger.
P. Malvacearum Mart.
P. rubigovera Wint.
P. Smilacis Schw.
P. Sporoboli Arth.
Uromyces Trifolii Lev.
U. Spermodococcos Cast.
U. Dactylidis Otth.
U. solida B. & C.
U. appendiculatus Lev.
Ustilago Buchloes E. & Tr.
U. Syntherismae Schw.
Cintractia Avenae E. & Tr.
Sorosporium Everhartii E. & G.
Cronartium asclepiadeum Fr.
Melampsora Quercus Schret.
M. Gleditschiae E. & E.
M. Hydrangeae Burrill.

Æcidium Epilobii DC.
Peridermium orientale Cke.
Phyllosticta hortorum Speg.
Staganospora Cyperi E. & Tr.
Stigmata Platani Fekl.
Scolecotrichum graminis Fekl.
Helminthosporium fumosum E. & M.
H. Ravenelii B. & C.
Sphacelotheca hydropiperis DeBy.
Cercospora grisea C. & E.
Cercospora persica Sacc.
Fusarium Celtidis E. & Tr.
Peronospora Halstedii Farl.
Stictis heliotricha E. & E.
Pseudopeziza Medicago Lib.
Erysiphe Liriodendri Schw.
Uncinula macrospora Pk.
U. polychaeta B. & C.
Microsphaeria quercina Burrill.
Acrosporum compressum Tode.
Ascomyces Quercus Cke.
Parodiella perisporioides B. & C.
Phyllachora Solidaginis Schw.

E. B. Southwick, New York, N. Y.

Aspergillus aviarius Pk.

(C)

SPECIES OF PLANTS NOT BEFORE REPORTED

Ranunculus circinatus *Sibth.*

Black creek, near Fulton, Oswego county. July. *W. W. Rowlee.*

Cardamine flexuosa *With.*

Cascadeville, Essex county. June. The plant here noted was formerly referred to *C. hirsuta* var. *silvatica*, but it differs so much from *C. hirsuta* that I am disposed to follow Withering, in considering it a distinct species.

Lychnis Floscuculi *L.*

Irrington, Westchester county. *C. L. Shear.* This is an introduced plant, and has probably escaped from cultivation.

Spiræa sorbifolia *L.*

Escaped from cultivation and established by roadsides and in a pasture near Fulton. July. *Rowlee.*

Rosa cinnamomea *L.*

Morehouseville, Hamilton county. July. This rose which has been introduced into this country and cultivated, is frequently found growing by roadsides or in adjoining fields. It often persists long after the houses, near which it was planted, have disappeared. It spreads somewhat by its roots, but probably does not spread by seed. The flowers are usually double.

Prunus Persica *L.*

Warsaw, Wyoming county; Turners, Orange county; Cold Spring, Putnam county. Also in Cayuga county. *W. R. Dudley.* In the three localities first mentioned the trees appear to have grown spontaneously, and were fruiting.

Pyrus Aucuparia *Gært.*

Schoharie; Delmar, Albany county, and Spencertown, Columbia county. Sometimes escaping from cultivation and growing wild in the borders of fields or woods.

Epilobium glandulosum *Lehm.*

Wet places, Schroon river, Essex county. August.

Epilobium adenocaulon *Haussk.*

Catskill mountains. In the Thirty-third Report this was reported as a form of *E. coloratum*; but it is now raised to specific rank.

Digitalis purpurea *L.*

Morehouseville. July. The foxglove is a highly ornamental plant, and sometimes escapes from cultivation and becomes established in fields and pastures. In the locality mentioned it was growing in a meadow and an adjoining pasture. About half the plants bore pure white flowers. The lower leaves of some of the plants were spotted by a parasitic fungus, *Ramularia variabilis*.

Buxbaumia indusiata *Brid.*

Decaying wood. Catskill mountains. October.

Lejeunea calcarea *Lib.*

Bark of cedar trees. Farmington, Ontario county. *L. M. Underwood.*

Frullania dilatata *Nees.*

Bark of trees. Marcellus, Onondaga county. *Underwood.*

Armillaria viscidipes *n. sp.*

(Plate 2, Figs. 1 to 3.)

Pileus fleshy, compact, convex or nearly plane, glabrous, whitish with a slight yellowish or reddish-yellow tint, flesh white, odor peculiar, penetrating, subalkaline; lamellæ narrow, crowded, sinuate or subdecurrent, whitish; stem equal, solid, viscid and slightly tinged with yellow below the narrow membranous annulus, whitish above; spores elliptical .0003 in. long .0002 broad.

Pileus 3 to 6 in. broad; stem 3 to 4 in. long, 6 to 12 lines thick.

In mixed woods. Rock City, Dutchess county. October.

This is the fourth species of *Armillaria* found in the State. It is a large, fine fungus, easily known by its white and yellowish hues, its crowded lamellæ, viscid stem and peculiar penetrating almost alkaline odor. The cuticle of the pileus is thin and soft to the touch, but it sometimes cracks longitudinally and is sometimes slightly adorned with innate fibrils. *A. dehiscens* is said to have a viscid stem, but it is also squamose and the pileus is yellowish ochraceous.

Tricholoma grande *n. sp.*

(Plate 3, figs. 5 to 8.)

Pileus thick, firm, at first hemispherical, then convex, often irregular, dry, squamulose, somewhat silky-fibrillose toward the margin which is at first involute, white, flesh grayish-white, taste

farinaceous; lamellæ close, rounded behind, adnexed, white; stem stout, solid, fibrillose, at first tapering upward, then equal or but slightly thickened at the base, pure white; spores elliptical, .00035 to .00045 in. long, .00024 broad.

Pileus 4 to 5 in. broad; stem 2 to 4 in. long, 1 to 1.5 in. thick.

Among fallen leaves in woods. Carrollton, Cattaraugus county. September.

The plants are often cæspitose and then the pileus is more or less irregular and the lamellæ somewhat transversely lacerated. The species is related to *T. Columbetta* from which its larger size, constantly squamulose pileus, more cæspitose mode of growth, larger spores and farinaceous taste separate it. Its edible quality was tested but its flesh is not tender nor its flavor captivating even in young specimens.

The young margin is pure white and both it and the upper part of the stem are sometimes studded with drops of moisture. The squamules of the pileus are brownish.

***Tricholoma sordidum* Fr.**

Manured ground. Menands, Albany county. May.

***Clitocybe rivulosa* Pers.**

In woods. Morehouseville, Hamilton county. July.

Our specimens were rather deeply umbilicate, with narrow lamellæ. In other respects they agree with the description of this species. The abundant branching radicating strings of mycelium bind the earth in a mass at the base of the stem.

***Clitocybe fuscipes* n. sp.**

Pileus thin, broadly convex or plane, umbilicate, glabrous, whitish and striatulate when moist, pure white when dry, odor and taste farinaceous; lamellæ nearly plane, subdistant, adnate or slightly decurrent, white; stem equal, glabrous or slightly mealy at the top, hollow, fuscous when moist, paler when dry; spores globose, .0002 to .00024 in. broad.

Pileus 4 to 8 lines broad; stem about 1 in. long.

Under pine trees. Carrollton. September.

Apparently allied to *C. pithyophila* but a much smaller plant with a farinaceous odor and a stem darker in color than the pileus or lamellæ. The stem often appears stout in proportion to the size of the pileus.

***Collybia expallens* n. sp.**

Pileus thin, broadly convex, then plane, centrally depressed, glabrous, hygrophanous, watery-brownish and striatulate on the thin margin when moist, whitish when dry, flesh whitish when dry, odor farinaceous; lamellæ rather broad, subdistant, rounded behind, adnexed, whitish subcinereous or dingy-yellowish; stem short, hollow, equal or slightly thickened at the base, spores broadly elliptical, .0002 in. long, .00016 broad.

Pileus 1 to 2 in. broad; stem about 1 in. long, 2 lines thick.

Among fallen pine leaves in woods. Salamanca, Cattaraugus county. September.

The pileus is very much paler when dry than it is when moist. When fresh the stem is adorned with delicate fibrils or flocci, but these soon vanish or disappear with a touch. In drying, the moisture disappears from the disk first, the margin last. The farinaceous odor is very distinct. The attachment of the lamellæ easily distinguishes this plant from similar species of *Clitocybe*.

***Mycena pseudopura* Cke.**

Woods. Salamanca. September.

***Omphalia corticola* n. sp.**

(Plate 2, figs. 8 to 12.)

Pileus thin, submembranous, convex, becoming expanded and umbilicate, distantly striate, whitish or pale cinereous; lamellæ narrow, distant, at first arcuate and adnate, then decurrent, white; stem short, curved, sprinkled with mealy particles, at first whitish with a brown base, then wholly brown or whitish at the top only; spores elliptical, .0003 in. long, .00016 broad, generally uninucleate.

Pileus 2 to 4 lines broad; stem 4 to 6 lines long.

Bark of living oak trees, *Quercus alba*. Carrollton. September.

This species closely resembles *Mycena corticola*, from which it is separated by its paler pileus, narrower and at length decurrent lamellæ and elliptical spores. Its mode of growth is the same as in that species.

***Pleurotus pubescens* n. sp.**

Pileus fleshy, convex, suborbicular, pubescent, yellowish; lamellæ broad, subdistant, rounded behind, sinuate, pallid tinged with red; stem short, firm, curved, eccentric, colored like the pileus; spores globose .0003 in. broad.

Pileus about 2 in. broad; stem scarcely 1 in. long.

Trunks of trees. Lyndonville. C. E. Fairman.

This is a species which in some respects approaches *P. Ruthæ*, but differs from it in having the lamellæ distinct behind, not anastomosing, and there are no red tints on the stem. The plant is said to be fragrant when fresh. I have seen it only in the dried state and, therefore, the description may not correspond exactly with the coloring of the fresh plant.

Pleurotus campanulatus *n. sp.*

(Plate 2, figs. 13 to 15.)

Pileus thin, subtenacious, campanulate, attached by the vertex, glabrous or sprinkled with a few grayish hairs, often plicate-striate on the margin, black; lamellæ few, distant, whitish; spores curved, .0003 to .00035 in. long, .00015 to .00016 broad.

Pileus 1 to 2 lines broad.

Dead branches of mulberry, *Morus rubra*. Saugerties. May.

This fungus resembles some forms of *P. striatulus*, but it is easily distinguished by its black color and curved spores. The vertex of the pileus is sometimes prolonged, forming a distinct stem.

Flammula squalida *n. sp.*

Pileus fleshy, convex or plane, firm, viscose, glabrous, dingy-yellowish or rufescent, flesh whitish, colored similar to the pileus under the separable pellicle; lamellæ rather broad, adnate, pallid, becoming brownish-ferruginous; stem slender, generally flexuous, hollow, fibrillose, subcartilaginous, pallid or brownish, pale-yellow at the top when young; spores brownish-ferruginous, .0003 in. long, .00016 broad.

Pileus 1 to 1.5 in. broad; stem 1.5 to 3 in. long, 1 to 2 lines thick.

In bushy and swampy places. Carrollton and Sandlake. September.

This species is closely allied to *F. spumosa*, of which, perhaps, some may prefer to consider it a variety. But having observed it several times in different localities and always finding it constant in its character and readily distinguishable, it has seemed best to recognize it as a species. It is distinguished by its slender habit, more uniform color, subcartilaginous stem, darker spores and generally dingy appearance. It is often strongly cæspitose and is found especially among alder bushes in swamps.

Pluteolus reticulatus *Pers.*

Decayed wood of deciduous trees. Carrollton. September.

Crepidotus distans *n. sp.*

(Plate 2, figs. 4 to 7.)

Pileus membranous, convex, distantly sulcate-striate, minutely pubescent, tawny; lamellæ broad, ventricose, very distant, adnate, colored like the pileus; stem minute, eccentric, reddish-brown; spores elliptical, .0004 to .0005 in. long, .00025 to .0003 broad.

Pileus 2 to 4 lines broad; stem about 1 line long.

Bark of thorn tree, *Cratægus tomentosa*. Carrollton. September.

A small species, very rare and easily overlooked, but very distinct by its color, its pubescent pileus and very distant lamellæ.

Cortinarius albidus *n. sp.*

(Plate 3, figs. 1 to 4.)

Pileus fleshy, convex or nearly plane, viscid, white, sometimes slightly tinged with yellow, flesh white; lamellæ close, emarginate, at first whitish, then cinnamon color; stem equal, solid, white, with a depressed oblique submarginate bulb at the base, veil white; spores subelliptical, .0004 to .00045 in. long, .00024 broad.

Pileus 2 to 4 in. broad; stem 2 to 4 in. long, 4 to 8 lines thick.

Thin woods. Carrollton. September.

Related to *C. multiformis* from which it is separable by its color, which is entirely white except in the mature lamellæ, and by its peculiar oblique bulb. Its spores also are longer and of a different shape.

Hygrophorus penarius *Fr.*

Mixed woods. Voorheesville. October.

Our specimens differ slightly in color from the typical form. They are white slightly stained with yellow and they retain their color in drying. Some of them are very large, the pileus being five or six inches broad.

Coprinus picaceus *Fr.*

Decaying trunks or branches of trees in woods. Lyndonville. June. *Fairman*.

The form here referred to this species differs somewhat from the description of the type in being smaller, in having no bulb to the stem and in having smaller spores. It is probably the "smaller variety growing on rotten wood" noticed by Stevenson in his *British Fungi*. I have seen the true form of the species from Kansas. The New York plant seems to me to be worthy of distinctive designation, at least as a variety, and I call it

Var. *ebulbosus*. Plant smaller; stem destitute of a bulb; spores .0003 to .0004 in. long, .0002 broad.

Polyporus annosus Fr.

Decaying wood. Salamanca. September.

This is evidently a very rare species in our State.

Dædalea sulphurella n. sp.

Resupinate, effused or nodulose, pale sulphur yellow; pores short, labyrinthiform, the dissepiments often lacerated and irpici-form in the dry plant; pores subglobose or broadly elliptical, .0002 in. long.

Much decayed wood. Salamanca. September.

Mostly very irregular or nodulose, following the irregularities of the wood and encrusting mosses. It is of a beautiful pale yellow color when fresh, but it changes to a dull pallid hue when dry.

Dædalea extensa n. sp.

Resupinate, thick, coriaceous, often uneven or somewhat nodulose, the margin at first cottony and white, soon changing to brown, the subiculum slightly rufescent; pores large, unequal and labyrinthiform, in vertical places oblique, whitish; spores minute, oblong, .00024 to .0003 in. long, .0001 to .00012 broad.

Prostrate trunks of deciduous trees. Salamanca. September.

This forms patches two feet or more in length on the sides and lower surface of the trunk. It follows the inequalities of the surface, and in vertical places it becomes more or less nodulose or develops a thick obtuse margin, which is velvety-tomentose and at length dark-brown in color, but I have seen no reflexed margin. It is suggestive of resupinate forms of *Trametes mollis*, but differs from it in the character of the pores in the thicker subiculum and in the absence of any free margin.

Hydnum caput-ursi Fr.

Decaying birch wood, *Betula lutea*. Carrollton. September.

Hydnum arachnoideum n. sp.

Resupinate; subiculum effused, very thin, webby or cottony, white; aculei minute, short, conical, unequal, scattered or sometimes crowded, whitish; mycelium often forming slender branching white radicular strings that creep over or permeate the matrix; spores minute, globose, .00016 in. broad.

Much decayed wood of hemlock, *Tsuga Canadensis*. Salamanca. September.

It seems to be closely related to *H. Micheneri*, but separated from it by the conical aculei. In this species also they are sometimes crowned with one to four cilia. The specific name has reference to the character of the subiculum.

***Odontia tenuis* n. sp.**

Effused, very thin, tender, dry, pallid, the margin not clearly fimbriate; verrucæ minute, scarcely visible to the naked eye, subglobose or oblong, scattered or crowded, sometimes entire; mycelium sometimes collected into dingy-yellowish branching slender threads.

Much decayed wood of birch, *Betula lutea*. Salamanca. September.

In texture and structure this resembles *Odontia fusca*, in color, *O. fimbriata*.

***Mucronella minutissima* n. sp.**

Aculei very minute, about one-sixth of a line long, gregarious, subulate, white; spores minute, elliptical, .00016 in. long, .0001 broad.

Decaying oak wood. Clarksville, Albany county. September.

This species is so minute that it is scarcely visible to the naked eye. The measurement of the aculei here given was taken from the dried specimen. In the fresh plant it would probably be a little greater.

***Thelephora odorifera* n. sp.**

Pilei 8 to 12 lines broad, caespitose, subcoriaceous, subdimidiate, imbricated, fibrous-tomentose, dingy-whitish or grayish; hymenium even, not polished, concolorous; stems short or none; spores globose, echinulate, colored, .0003 to .00035 in. broad.

Rich soil under cedar trees. Jamesville. July. *Underwood*,

The species is apparently related to *T. intybacea*, but it differs from that fungus in its paler color, smooth hymenium and larger spores. The specimens at first were quite fragrant, but the odor was lost after a few weeks.

***Porothelium fimbriatum* Fr.**

Decaying wood. Carrollton. September.

***Cyphella arachnoidea* n. sp.**

Irregularly cupular, unequal, very thin, membranous, tender, minutely downy externally, pure white, the hymenium in large specimens somewhat uneven; spores subglobose, .00016 to .0002 in. long, .00016 broad.

Cups 1 to 2 lines broad, seated upon or developing from fine white loosely branching webby strings of mycelium.

Bark and mosses. Carrollton. September.

The specific name has reference to the character of the mycelium, by which the species may easily be recognized.

***Geaster limbatus* Fr.**

Caldwell, Warren county. June. The specimens were old, but appear to belong to this species.

***Geaster rufescens* Pers.**

Gouverneur, St. Lawrence county. Mrs. E. C. Anthony.

***Phyllosticta Ludwigiae* n. sp.**

(Plate 4, figs. 22 and 23.)

Spots small, orbicular, sometimes confluent, centrally pallid, dry, surrounded by a brownish or purplish-red border; perithecia few, often single, epiphyllous, .004 in. broad, black; spores elliptical or oblong, binucleate, colorless, .0003 to .00035 in. long, .00016 broad.

Living leaves of water purslane, *Ludwigia palustris*. Selkirk. July.

***Phoma sordida* Sacc.**

Dead twigs of water beech, *Carpinus Americana*. Cemetery, Albany county. May.

***Dothiorella Celtidis* n. sp.**

Stroma small, depressed, suborbicular, seated on the inner bark, erumpent; perithecia immersed in the stroma; spores oblong, obovate or subfusiform, often binucleate or trinucleate, colorless, .0008 to .001 in. long, .0003 to .00035 broad, sometimes oozing out in a whitish mass.

Dead branches of hackberry, *Celtis occidentalis*. Saugerties. May.

***Sphæroopsis Ellisii* Sacc.**

Dead corticated branches of tamarack, *Larix Americana*. Kasoag, Oswego county. July.

Var. *Laricis*. Perithecia larger, about .014 in. broad, often arranged in rows and surrounded by the whitish ruptured epidermis; spores .0012 to .0018 in. long, .0006 to .0008 broad.

***Sphæroopsis rubicola* C. & E.**

Dead stems of blackberry, *Rubus villosus*. Menands. October.

Diplodia Liriodendri *n. sp.*

Perithecia hemispherical, subdepressed, erumpent, single or two to four in a cluster, black; spores oval or oblong, at first simple, then uniseptate, colored, .0007 to .0009 in. long, .0005 broad.

Dead branches of tuliptree, *Liriodendron tulipifera*. Sandlake. June.

Diplodia multicarpa *n. sp.*

Perithecia very numerous, sometimes surrounding the branch on all sides, minute, erumpent, slightly prominent, partly covered by the longitudinally or stellately ruptured epidermis, black; spores oblong elliptical, .0007 to .0009 in. long, .0004 to .00045 broad.

Dead branches of sassafras. Carrollton. September.

Hendersonia epileuca *B. & C.*

Dead branches of red mulberry, *Morus rubra*. Saugerties. May.

Septoria Pteridis *n. sp.*

Perithecia hypophyllous, subconic, black; spores filiform, very long, curved or flexuous, continuous, .0003 to .0004 in. long.

Dead fronds of common brake, *Pteris aquilina*. Sandlake. June.

Melanconium zonatum *E. & E. in ed.*

Dead branches of ironwood, *Ostrya Virginica*. Clarksville. September.

This species has sometimes been referred to *M. bicolor*, which it resembles, but from which it may be distinguished by the absence of the conspicuous white stroma of that species and by the translucent zone in the middle of the spores.

Septomyxa Carpinii *n. sp.*

(Plate 4, figs. 13 and 14.)

Heaps subcutaneous, slightly prominent, erumpent, whitish within; spores hyaline, narrowly fusiform, binucleate, at length uniseptate, oozing out and forming a subrufescent convex mass on the surface of the matrix.

Bark of water beech, *Carpinus Americana*. Meadowdale, Albany county. June.

Pestalozzia lignicola *Cke.*

Decorticated wood of spruce, *Picea nigra*. Redfield. July. It sometimes has a hysteriiform appearance.

Puccinia Spergulae DC.

Living stems and leaves of corn spurry, *Spergula arvensis*. Redfield. July.

Doassansia Sagittariae Fisch.

Living leaves of arrowhead, *Sagittaria variabilis*. Redfield. July. *Uredo Sagittariae* West., *Protomyces Sagittariae* Fekl. and *P. Bizzozzerianus* are given as synonyms.

Aspergillus aviarius n. sp.

(Plate 4, figs. 9 to 12.)

Sterile hyphae creeping, white or whitish, fertile hyphae erect, simple, continuous, .0003 in. thick, terminating at the apex in a globose vesicle, which is .0008 to .0012 in. broad, with an uneven or somewhat papillose surface; chains of spores growing directly from the surface of the vesicle, spores minute, globose, smooth, .00008 to .0001 in. broad, both these and the hyphae at first whitish, then pale bluish-green or glaucous.

On the inner costal surface of a canary bird. New York. November. *E. B. Southwick*.

The bird from which this fungus was taken appeared to be sick for about four days immediately preceding its death. It would try to sing, but could not from hoarseness. It appeared to be cold, and was given a warm bath, but it died the following night. Upon cutting open the body the fungus was found. Its occurrence within the body of the bird is remarkable, and if it was the cause of its death it must be considered an injurious species. No other cause was evident. But how it could gain an entrance into the visceral cavity of the body and why it should fruit therein are mysteries.

The species differs from *A. virens* Lk. by its more slender hypae, smaller spores, papillose vesicle and by the grayish-blue or glaucous color of the patches.

Sporotrichum Lecanii n. sp.

Hyphae very slender, .00008 to .0001 in. thick, procumbent, irregularly branched, branches suberect, white; spores minute, colorless-oblong or cylindrical, .0002 to .0003 in. long, .0001 to .00012 broad.

On scale insect of cucumber tree, *Magnolia acuminata*. Salamanca. September.

The fungus covers the insect with a dense white pulverulent coat. "The insect appears to be an undescribed species of *Lecanium*." *J. A. Lintner*.

Diplosporium breve *n. sp.*

Hyphæ cæspitose, short, sparingly branched, white; spores oblong, uniseptate, slightly constricted at the septum, colorless, .0005 to .0006 in. long, .0002 to .00025 broad.

On some effete *Sphæria*. Redfield. July.

Didymaria Unger *Od.*

Living leaves of northern buttercup, *Ranunculus septentrionalis*. Redfield. July.

Ramularia destruens *n. sp.*

(Plate 4, figs. 4 to 6.)

Tufts amphigenous, minute, gregarious, white, the hyphæ extremely short, .0002 to .0004 in. long; spores elliptical or oblong, colorless, .0002 to .0005 in. long, .00012 to .00015 broad.

Living leaves of mountain ash. *Pyrus Americana*. Hewitt's pond, Adirondack mountains. July.

This is a very destructive fungus. It quickly discolors and kills the leaves. The discoloration in most cases appears to progress from the apex toward the base of the leaf, which soon assumes a brown and dead appearance as if burned by fire. The effect is somewhat similar to that produced in the foliage of the apple and pear by the "blight." Nearly all the leaves were killed on the tree from which our specimens were taken.

The fruiting part of the fungus breaks out here and there on the dead leaves, but it is not abundant. The mischief is apparently due to the rapidly spreading mycelium. The species is one of the most minute of the genus, and is easily overlooked, though the effect of its work in the leaves is painfully evident.

Ramularia Junci *n. sp.*

Spots transverse, brown; hyphæ extremely short, cæspitose spores very slender, straight or curved, often slightly narrowed toward one end, .001 to .002 in. long.

Living leaves of *Juncus marginatus*. Selkirk. June.

Ramularia graminicola *n. sp.*

(Plate 4, figs. 1 to 3.)

Spots small, numerous, irregular or subelliptical, pallid, surrounded by a broad, indeterminate brownish border; hyphæ amphigenous, short, colorless, .0005 to .001 in. long; spores subcylindrical, or fusiform, sometimes pointed at each end, sometimes becoming spuriously uniseptate, colorless, .001 to .0014 in. long.

Living leaves of fowl meadow grass, *Poa serotina*. Wilmurt lake. July.

This and the two preceding species are perhaps referable to the genus *Cylindrosporium* on account of their simple spores and short hyphæ.

Ramularia Heraclei Sacc.

Living leaves of cow parsnip, *Heracleum lanatum*. Morehouseville. July.

Cercospora Veratri n. sp.

(Plate 4, figs. 7 and 8.)

Spots suborbicular or elliptical, blackish, slightly frosted by the epiphyllous subfusiform, mostly triseptate colorless spores, which terminate at one end in a long slender tapering almost hair-like point; hyphæ very short, almost obsolete; spores .002 to .004 in. long, .00016 to .0002 broad in the widest part.

Languishing leaves of Indian poke, *Veratrum viride*. Morehouseville. July.

Bispora effusa n. sp.

(Plate 4, figs. 15 to 17.)

Effused in a black somewhat velvety stratum; hyphæ erect, simple, colored, forming chains of spores; spores oblong, uniseptate, slightly constricted at the septum, .0005 to .0006 in. long, .00016 to .0002 broad.

Decorticated wood of sugar maple, *Acer saccharinum*. Adirondack mountains.

Cladosporium entoxylinum Cd.

Decorticated wood of spruce, *Picea nigra*. Wilmurt lake. July.

Septonema episphæricum n. sp.

Tufts confluent, blackish-brown; hyphæ and chains of spores often densely fasciculate, .005 to .006 in. long; spores variable, oblong or cylindrical, one to three septate, .0005 to .0012 in. long, .0002 to .0003 broad, colored or subhyaline.

On effete *Diatrype stigma*. Morehouseville. July.

Apparently allied to *S. bisporoides*, from which it differs in its larger spores and in its densely fasciculate mode of growth.

Coniothecium effusum Cd.

Decaying chestnut wood. Conklingville. September.

Epicoccum vulgare Cd.

Living or languishing leaves of arrowhead, *Sagittaria variabilis*. Carrollton. September. Our specimens belong to var. *pallescens* Rabenh.

Epicoccum diversisporum Preuss.

Decorticated wood of spruce. Wilmurt lake. July. Notwithstanding the great diversity between the habitat of our fungus and of the typical form of the species to which we have referred it, the agreement with the description is so close that we dare not separate our plant. The spores in it vary from .0003 to .0008 in. in diameter. Rarely it is not seated on a red spot. It grows in company with *Cladosporium entoxylinum*.

Valsa microstoma Fr.

Branches of wild red cherry, *Prunus Pennsylvanica*. Hewitt's pond, Adirondack mountains. July.

Valsa coöperta Cke.

Dead branches of elm, *Ulmus Americana*. Sandlake. June.

Eutypella cerviculata Sacc.

Dead trunks and branches of water beech, *Carpinus Americana*. Lyndonville. Fairman. Carrollton and Bethlehem. September.

Diaporthe binoculata Sacc.

Dead branches of cucumber tree, *Magnolia acuminata*. Carrollton. September.

Our specimens differ from the description of *D. binoculata* in the black circumscribing line which sometimes penetrates the wood slightly. The spores also are a little smaller than the dimensions given for those of that species, but in other respects the agreement is so well sustained that our plant is probably not specifically distinct. The spores in it are .0006 to .0007 in. long, about .0003 broad. It is sometimes associated with *Sphaeronema Magnoliae*. The typical form was found on *Magnolia glauca*. It is *Valsa binoculata* Ellis.

Diaporthe tuberculosa Sacc.

Dead trunk of June berry, *Amelanchier Canadensis*. Carrollton. September.

Var. *dispersa*. Perithecia .02 to .025 in. broad, a little larger than in the type, the ostiola often piercing the epidermis separately.

Diaporthe rostellata Nitsch.

Stems of blackberry, *Rubus villosus*. Menands. July. Also on dead stems of *Rubus odoratus*. Salamanca.

This may be considered a noxious fungus. The plant found on blackberry stems had surrounded the stem with a pallid spot and had killed all the plant above this spot. The asci are often only four-spored.

Diaporthe Americana Speg.

Dead branches of cucumber tree. Carrollton. September.

The published description of this species is incomplete the spores in the specimens from which it was made being immature. In our specimens they are narrowly fusiform, acute at each end, quadrinucleate, .0006 to .0007 in. long, .00016 broad.

Massaria epileuca B. & C.

Dead branches of red mulberry, *Morus rubra*. Saugerties. May.

Caryospora minor n. sp.

(Plate 4, figs. 18 to 21.)

Perithecia .014 to .021 in. broad, slightly sunk in the matrix, subglobose, even, black; asci four to eight-spored, subcylindrical, .006 in. long, .0008 broad; spores fusiform, pointed at each end, uniseptate, slightly colored, .0018 to .002 in. long, .0005 broad.

Pericarp of hickory nut. Albany.

This differs from *C. putaminum* in its smaller perithecia which are not concentrically grooved and in its shorter, narrower and paler spores which are more numerous in an ascus.

Metasphæria nuda n. sp.

Perithecia superficial, ovate or conical, submembranous, scattered or few collected together, black, the walls parenchymatous and blue under the microscope; asci about .003 in. long, .0005 broad; spores crowded or biseriate, fusiform, triseptate, colorless, .0007 to .0008 in. long, .00024 broad.

Dead stems of millet, *Panicum miliaceum*. Menands. October.

The species approaches *M. Panicorum*, from which it is distinct by its superficial perithecia and shorter spores. The superficial character of the perithecia would remove the species to *Zignoella*, but the texture is not carbonaceous, and it has therefore been placed in *Metasphæria*.

Pleospora Asparagi *Reb.*

Dead stems of asparagus, *Asparagus officinalis*. Menands. April.
This species appears scarcely to differ from *P. herbarum* except in the fewer septa of the spores.

Lophiostoma vagans *Fab.*

Dead stems of *Lonicera tartarica*. Lyndonville. July. *Fairman*.

Stictis minuscula *Karst.*

Dead twigs of spruce, *Picea nigra*. Redfield. July.

Pseudopeziza Pyri *n. sp.*

Cups scattered, minute, .014 to .021 in. broad, hypophyllous, erumpent, surrounded by the laciniately ruptured epidermis, brownish when moist, blackish when dry, the margin incurved; hymenium whitish or grayish-white; asci subcylindrical, .002 to .0024 in. long; spores biseriate, oblong, straight or slightly curved, colorless, .0004 to .0005 in. long.

Fallen leaves of mountain ash, *Pyrus sambucifolia*. Cascadeville, Essex county. June.

Saccharomyces Betulæ *Pk. & Pat.*

(Plate 2, figs. 16 and 17.)

Conidia variable, elliptical, oblong or subcylindrical, often forming submoniliform strings of cells .0003 to .0008 in. long, .00016 broad, intermingled with slender mycelial threads, the whole forming a thin whitish gelatinous stratum.

Sap moistened cut surface of a birch stump, *Betula lutea*. New Baltimore, Greene county. May.

This is a curious species, apparently related to *S. albicans*, but differing from it in habitat and spore dimensions, and it is also peculiar and aberrant in having distinct hyphæ.

(D)

REMARKS AND OBSERVATIONS

Thalictrum purpurascens *L. var. ceriferum* *Aust.*

Fishkill mountains. June.

Cimicifuga racemosa *Nutt.*

Common in the Highlands and in the southwestern part of the State. It is rare in the eastern and northern parts.

***Nymphæa odorata* Ait.**

After flowering the peduncle sometimes takes the form of a spiral coil and thus shortens itself either to adapt itself to diminishing depth of water or to draw the ovary beneath the surface to mature its fruit.

Valisneria spiralis does the same thing. Fruiting specimens showing the coiling of the peduncles were collected in Boreas pond, Adirondack mountains.

***Corydalis flavula* DC.**

Green pond, one mile east of Jamesville. Prof. L. M. Underwood.

***Lychnis vespertina* Sibth.**

Storm King station. June.

***Stellaria media* Smith.**

This chickweed is a very variable plant. It often lives through the winter and is then ready to bear fruit early in the spring. Specimens were collected in April last bearing an abundance of flowers and mature fruit. The plants were procumbent, the nodes short, leaves small and but slightly petioled, and the whole aspect was quite unlike that of the more erect large-leaved form that occurs later in the season. The fields where these plants grew were in cultivation the preceding summer, but the seeds apparently germinated after cultivation ceased, and the mild winter enabled the plants to perfect themselves and bear fruit early in the spring.

***Linum Virginianum* L.**

Selkirk. July. It is not rare to find two to four plants growing from the same root, and the old stem of last year's growth standing among them, thus indicating a perennial character.

***Rubus hispida* L. var. *suberecta* n. var.**

Stems erect or recurved, densely beset with stiff bristles or weak prickles; leaves generally five-foliate on the young plants, trifoliate on old ones, the leaflets *thin*, broadest in the middle, rather sharply serrate, mostly *acute* or *short acuminate*, entire and wedge-shaped at the base.

Pastures and bushy places. Morehouseville. July.

This plant is so unlike the ordinary form of *R. hispida* that I am constrained to consider it as a variety. It is quite abundant in the locality mentioned, growing chiefly in dry places. The young

shoots are perfectly erect and nearly always have the leaves either completely five-foliated or the lateral leaflets deeply two-lobed, so that were it possible to overlook the dense coat of bristles with which the stem and petioles are clothed they might easily be mistaken for a small growth of *Rubus villosus*. The old stems usually become recurved as in *R. occidentalis*, and have the leaves of the flowering branches trifoliate. The peduncles and pedicels are mostly bristly and the sepals mucronate pointed. The plants grow from one to two feet high. Were the species of *Rubus* disposed to hybridize as some claim for *R. occidentalis* and *R. strigosus*, it might be asserted that this is a hybrid between *R. villosus* var. *frondosus* and *R. hispidus*, the former giving character to the leaves and the mode of growth, the latter to the clothing of the stem. The former was present in the vicinity of these plants, but the latter was not seen in that neighborhood. It is in my opinion to be considered a variety rather than a hybrid. The Catoga plant noticed in the Thirty-eighth report is the same thing. It approaches variety *setosus* T. & G. in some respects, but its thin leaves and more erect habit distinguish it.

***Myriophyllum tenellum* Bigel.**

Plentiful at the outlet of Cheney pond. August.

***Lythrum alatum* Pursh.**

Apparently well established in a pasture near Selkirk.

***Opuntia vulgaris* Mill.**

In grassy ground on the summit of a high hill in Columbia county, four miles south of Hudson, is a station for this plant. The hill is locally known as Mount Merino, and the plants are scattered over an area several rods in extent. The plants mostly exhibit the characters that would place them under *O. Rafinesquii*, but in some the short leaves of *O. vulgaris* are present. I therefore leave the species for the present under the name applied to it by Dr. Torrey in the State Flora.

***Galium triflorum* Mx.**

Professor R. P. Thomas informs me that this common plant, popularly known as "sweet-scented bed straw," has recently acquired considerable celebrity among some of the inhabitants of Montgomery county, because of its medicinal qualities. It is reported that an aggravated case of dropsy, which had been pronounced by the physicians hopeless and incurable, was cured by the

use of a decoction of this herb. In the United States Dispensatory, by Wood and Bache, *Galium Aparine* is noticed as having been used for dropsy, but I find no mention of this plant.

***Aster undulatus* L.**

A strongly marked form occurs near Carrollton. in which the leaves are mostly lanceolate with the margins very much curled or crisped.

***Aster Novi-Belgii* L.**

Boreas River, Adirondack mountains. August.

***Antennaria plantaginifolia* Hook.**

A peculiar form was collected in Sandlake, Rensselaer county. The flower heads are three to five, mostly four, racemosely placed at distances of a half inch or more. The stem is very slender, about a foot high, and the leaves are narrow, scarcely exceeding half an inch in the widest part.

***Rudbeckia triloba* L.**

This cone flower occurs in several places along the road between Rhinebeck and Rock City in Dutchess county. As in Ulster county, it appears to have escaped from cultivation in flower gardens. But few of the plants have the leaves three-lobed.

***Verbascum Lychnitis* L.**

Sandy soil at Sylvan Beach, Oneida county. A form with white flowers.

***Calopogon pulchellus* R. Br**

On the marsh near Kasoag a form was found having beautiful lilac-tinted flowers. Plants having flowers of the ordinary color grew near them and made the contrast more noticeable.

***Clintonia umbellata* Torr.**

This plant occurs as far east as Carrollton, Cattaraugus county. Some plants have the berries blue as in *C. borealis*, others have them black.

***Eleocharis intermedia* Schultes.**

Cheney pond. August. A small form with culms two to five inches long and spikes one to two lines.

***Scirpus Smithii* Gray.**

Sylvan Beach. July.

Carex folliculata L.

An unusual form of this sedge grows on "Beaver meadow" near Morehouseville. The stems are stout, erect, only one to two feet high, very leafy; the pistillate spikes are three to four, approximate, all on short erect peduncles.

Carex crinita Lam.

A large form with three staminate spikes all fertile at the apex was collected at Wilmurt lake, Hamilton county. Variety *minor* Boott was collected at Sylvan Beach, Oneida county.

Polypodium vulgare L. var. **cristatum** Lowe.

(Plate 1, figs. 1 to 4.)

Rock City, Dutchess county. October.

Fronds of this very beautiful and rare variety were sent me by Mr. Charles A. Coons. I afterwards visited the locality and found the fern growing in a small patch, probably six or eight feet long by one to two feet wide. All the fronds in this patch exhibited the peculiar character of those first sent me. Fronds of the usual form were growing near by but did not mingle with these, nor were any intermediate forms seen. The fronds are beautifully crested, being one to three times dichotomously or somewhat irregularly divided at the apex, and each segment is dilated at its apex and projects in two to six lobes, these lobes manifesting a disposition to extend themselves along the upper margin of the segment. Sometimes the branches at the apex are a little twisted or distorted and form a sort of rosette. The ultimate ones terminate in lobes similar to those at the apices of the segments. The fronds are fertile.

This variety was originally discovered in Ireland by Mr. Henry S. Perry. It was figured and described by Lowe in his work on New and Rare Ferns. This figure exhibits well the dilation and lobing of the apices of the segments in our plant, but shows the crested branching apex of the frond very poorly, for it is represented as scarcely more than bifurcate. His description reads thus: "Like *Aspidium filix-mas* var. *cristatum*, the present plant has multifid or tasseled apices on each pinna, the midrib of the frond dividing and branching about an inch below the apex of the frond, as well as the midrib of each pinna about a quarter of an inch below the apex of each pinna."

"The present variety, from the points of each frond being branched and crested and all the divisions terminating in crested tufts so as to form a frilled margin, is both distinct and beautiful."

In our plant there is apparently a tendency to branch and divide more freely at the apex of the frond and less freely and deeply at the apices of the segments than in the European. So far as I know it has not before been found in this country. Probably there will be a considerable demand for it by lovers and propagators of ferns, but it is to be hoped that specimens will not be taken so freely from the patch as to destroy the station.

Isoetes echinospora Durieu.

Cheney pond. August.

Riccia fluitans L. var. *Sullivantii* Aust.

Muddy places in ditches. Selkirk. June.

Collybia Familia Pl.

This species is not rare in Cattaraugus county. It grows in clusters of very many individuals on old prostrate trunks and decaying wood of hemlock. It varies in color from nearly white to brown. It is somewhat hygrophanous and the stem is more or less villose-tomentose at the base. It is allied to *C. acervata*, but the pileus is not umbonate, there are no rufous or incarnate tints either in the pileus lamellæ or stem, and the spores are minute and globose .00012 to .00016 inch in diameter, not elliptical as in that species.

Pleurotus atrocæruleus Fr.

In Sylloge the spores of this species are said to be globose, 2 to 3 mk. in diameter. If this is correct then the plant referred to this species in Report 39, p. 65, must be distinct. On the other hand both Smith and Cooke represent the spores of this species as elliptical and closely agreeing with those of the American plant in dimensions.

On the supposition that the English mycologists are correct in their representations of the spores of this species our plant can scarcely be more than a variety differing in color from the type. Fine specimens were found at Carrollton growing on the trunk of a cucumber tree. It seems best at least to designate it as a variety, for it does not appear to exhibit at all the dark blue hue so characteristic of the type.

Var. griseus. Pileus grayish or grayish-brown, clothed with rather coarse pointed whitish or grayish hairs; lamellæ not broad; spores elliptical, sometimes slightly curved, .0003 in. long, .00016 broad.

The pileus is sometimes attached by the vertex, and the margin is often beautifully crenately lobed or scalloped.

Entoloma cyaneum *Pk.*

Decaying logs in woods. Morehouseville. July. These specimens differ from the type in having the pileus grayish-brown and the stem wholly bluish. The species approaches *E. griseo-cyaneum* very closely, but differs in the color of the pileus. It is very rare.

Pholiota discolor *Pk.*

Two forms of this species are found. One has a scattered mode of growth, the other a cæspitose. The latter was found on decaying wood of birch, *Betula lutea*, at Morehouseville. The species is allied to *P. marginata*, from which it is readily distinguished by its viscid pileus.

Stropharia squamosa *Fr.*

Specimens collected near Salamanca agree very closely with the description of this species, but they differ in having the pileus of a beautiful orange-red color. In this respect, and indeed in many other respects, they agree better with the description of *Stropharia thrausta*, but disagree in having the pileus neither hygrophanous nor glabrous. The plants are generally rather slender, though individuals occur having a stout stem and a pileus three or four inches broad. This is viscid and beautifully adorned with whitish superficial scales which are easily destroyed. The margin is often appendiculate. The lamellæ are broad and subdistant, and the stem is long, hollow, floccose-squamose and annulate. The whole plant is fragile, but this may be due in a measure to the fact that it is apt to be infested by the larvæ of insects. It is probably to be considered a variety of *S. squamosa* and is apparently equivalent to *Agaricus thraustus* var. *aurantiacus* of Cooke's Illustrations.

Boletus punctipes *Pk.*

Under pine trees. Corning, Steuben county. September. This species had not been observed by me since its discovery in 1878. The spores when first dropped are olive green on white paper, but the greenish hue soon fades or rather changes to brownish-ochraceous.

Coniophora puteana *Fr.*

If this species is rightly understood by me it is, as Fries says, a very variable one. It varies not only in the color of the hymenium but also in its character and in that of the margin. The hymenium

is sometimes even, sometimes tuberculose and occasionally rimose when dry, as in some species of *Corticium*. The margin may be broad naked and white or it may be obliterated by the hymenium. The subiculum is either thin and papery or thick and firm. It is sometimes separable from the matrix. It occurs on spruce, hemlock, birch, sycamore, ironwood, etc. A form is found on spruce having the characters of variety *areolata* Fr. except in the color of the hymenium.

Var. *tuberculosa* has the subiculum thick, firm, yellowish, the hymenium persistently tuberculose. This was found on sycamore, *Platanus occidentalis*.

Var. *rimosa*. Hymenium rimose. On hemlock, *Tsuga Canadensis*.

Doassantia Alismatis Cornu.

Living or languishing leaves of *Alisma Plantago*. Whitehall. September.

Fusicladium destruens Pl.

When my last report was written this fungus was suspected of being the cause of a disease in the oat plant. Observations made in the diseased oat fields the past summer lead to a different conclusion. The disease has appeared over a wide extent of country, and in the fields examined scarcely an unaffected plant could be found. Besides, other fungi, such as *Cladosporium herbarum* and *Dinemaspodium graminum*, were found upon the dead and dying leaves. It may be affirmed that the presence of these fungi on the leaves is a consequence not a cause of their death, for these species are known to inhabit the dead tissues of plants. It is hardly probable that the *Fusicladium* could have spread so extensively, in so short a time, nor that it should be so omnipresent in every oatfield. It is more reasonable to suppose that it, like the other fungi mentioned, is a consequence rather than a cause of the disease. Many discolored leaves had no fungus upon them. An examination of the roots of the affected plants gave no indication of the presence of insects or nematoids.

Tuberculina persicina Sacc.

On blackberry rust, *Cæoma nitens*. Morehouseville.

Vibrissea truncorum Fr.

Var. *albipes*. Stem short, thick, white. Decaying wood about the margin of lakes. Hewitt's pond and Clear lake, Adirondack mountains. July.

The following species and varieties are extra limital. Having been sent to me for identification, and finding no description applicable to them, I place them on record here.

Tricholoma maculatescens *n. sp.*

Pileus compact, spongy, reddish-brown, convex then explanate, obtuse, even, slightly viscid when wet, becoming rivulose and brown-spotted in drying, flesh whitish, margin inflexed, exceeding the lamellæ; lamellæ slightly emarginate, rather narrow, cinereous; stem spongy-fleshy, equal, sometimes abruptly narrowed at the base, solid, stout, fibrillose, pallid or whitish; spores oblong or subfusiform, pointed at the ends, uninucleate, .0003 in. long, .00016 broad.

Pileus 1.5 to 3 in. broad; stem 2 to 3 in. long, 6 to 9 lines thick.

Among fallen leaves in deciduous woods. Ohio. October and November. *A. P. Morgan.*

This appears to be related to *T. transmutans* and *T. flavobrunneum*, but may be distinguished from them by the spotting of the pileus and the shape of the spores.

Agaricus campestris *L.*

Var. *griseus*. Pileus pale-gray, silky, shining; annulus evanescent. Winchester, Virginia. October. *T. Taylor.*

This mushroom, though quite different in appearance from the ordinary forms of *A. campestris*, is scarcely more than a variety. Its spores are of the same size and character as in that species. It is eaten freely by the inhabitants of Winchester.

Armillaria mellea *Vahl.*

Var. *radicata*. Stem penetrating the ground deeply with a tapering, root-like prolongation.

London, Canada. *J. Dearness.*

The root-like prolongation of the stem is suggestive of that seen in *Collybia radicata*, but in all other respects the plant is *A. mellea*.

(E)

NEW YORK SPECIES OF TRICHOLOMA

Tricholoma *Fr.*

Hymenophorum continuous with the stem, the veil obsolete or only floccose or fibrillose and adherent to the margin of the pileus; lamellæ sinuate behind, not equally attenuate, adnate or decurrent; stem fleshy, not corticated.

The species of *Tricholoma* are numerous and are mostly rather large, having a fleshy pileus and a stout fleshy or fibrous-fleshy stem and white spores. The veil is usually very slight, consisting of a mere pruinosity or of a minute tomentum or of downy flocci or fibrils adhering to the margin of the pileus, and it is not often noticeable except in the young plant. The pileus is often thick and umbonate but very rarely umbilicate. The genus is distinguished from *Armillaria*, on one hand, by the entire absence of an annulus and from *Clitocybe*, on the other, by the sinuate or emarginate lamellæ and the fleshy or fibrous fleshy stem. From *Collybia*, in which the character of the lamellæ is similar, it is distinguished by its more fleshy pileus and stem and by its more terrestrial habitat, for nearly all its species grow on the ground.

Some of the species are known to be edible and probably many others are. None are known to be absolutely poisonous.

The species were arranged by Fries in two series, one of which was composed of four tribes, the other of three. One tribe in each series is yet unrepresented in our Flora. The principal distinguishing features of the series and tribes are found in the pileus.

KEY TO THE TRIBES

- | | |
|---|-------------|
| Pileus viscid when moist..... | Limacina. |
| Pileus not viscid when moist | 1 |
| 1. Pileus dry | 2 |
| 1. Pileus not dry..... | 3 |
| 2. Pileus fibrillose or adorned with floccose or fibrillose scales..... | Genuina. |
| 2. Pileus punctate-granulose or adorned with smooth scales..... | Rigida. |
| 2. Pileus at first slightly silky, soon glabrous..... | Sericella. |
| 3. Pileus fleshy, soft, fragile, adorned with watery spots or rivulose..... | Guttata. |
| 3. Pileus compact, then spongy, glabrous, moist..... | Spongiosa. |
| 3. Pileus thin, hygrophanous..... | Hygrophana. |

SERIES A

Pileus viscid when moist, squamose, fibrillose, granulated or silky, or if glabrous, its flesh firm, not spongy, watery or hygrophanous; veil fibrillose.

Limacina

Pileus viscid when moist, either innately fibrillose, or squamulose, truly and firmly fleshy, not hygrophanous, the margin almost naked.

The species of this tribe are distinguished from those of all the other tribes by their viscid pileus. They are divided into two groups, in one of which the lamellæ are unchangeable in color or do not become reddish or reddish-spotted; in the other they change color with age or become reddish-spotted.

| | |
|--|--------------|
| Pileus white | resplendens. |
| Pileus not white | 1 |
| 1. Lamellæ yellow | equestre. |
| 1. Lamellæ not yellow | 2 |
| 2. Lamellæ not becoming reddish or reddish-spotted | 3 |
| 2. Lamellæ becoming reddish or reddish-spotted | 5 |
| 3. Lamellæ crowded; pileus glabrous | 4 |
| 3. Lamellæ subdistant; pileus innately fibrillose | sejunctum. |
| 4. Pileus greenish-yellow | intermedium. |
| 4. Pileus pale alutaceous | terriferum. |
| 5. Pileus red or incarnate | Russula. |
| 5. Pileus tawny-red or reddish-brown | 6 |
| 6. Pileus squamulose | Peckii |
| 6. Pileus not squamulose | transmutans. |

Lamellæ not becoming discolored nor red-spotted.

Tricholoma equestre L.

EQUESTRIAN TRICHOLOMA

(Hym. Europ. p. 48. Syl. Fung. Vol. V. p. 87.)

Pileus fleshy, compact, convex becoming expanded, obtuse, pale yellowish, more or less reddish tinged, the disk and central scales often darker, the margin naked, often flexuous, flesh white or tinged with yellow; lamellæ rounded behind, close, nearly free, *sulphur-yellow*; stem stout, solid, pale-yellow or white, white within; spores .00025 to .0003 in. long, .00016 to .0002 broad.

Pileus 3 to 5 in. broad; stem 1 to 2 in. long, 6 to 10 lines thick.

Pine woods, especially in sandy soil. Albany county. September to November.

This is a noble species but not plentiful in our State. The pileus is said to become greenish very late in the season. The stem, in the typical form, is described as sulphur-yellow in color, but with us it is more often white. The scales of the disk are sometimes wanting. In our plant the taste is slightly farinaceous at first, but it is soon unpleasant.

Variety *pinastreti* A. & S. is a slender form having a thin even pileus, thinner and more narrow lamellæ and a more slender stem. *Agaricus crassus* Scop., *A. aureus* Schæff. and *A. flavovirens* Pers. are recorded as synonyms of this species.

Tricholoma intermedium *Pk.*

INTERMEDIATE TRICHOLOMA

(N. Y. State Mus. Report 41, p. 60.)

Pileus thin, campanulate, obtuse, glabrous, slightly viscid when moist, greenish-yellow, flesh white; lamellæ crowded, free or slightly adnexed, white; stem equal, firm, glabrous, white; spores broadly elliptical, .0002 in. long, .00016 broad.

Pileus 2 to 3 in. broad; stem 1 to 2 in. long, 3 to 5 lines thick.

Thin woods. Catskill mountains. September.

This species resembles some forms of *T. equestre*, from which it is separated by its white lamellæ. It appears to be intermediate between that species and *T. sejunctum*, from which its glabrous pileus and crowded lamellæ distinguish it.

Tricholoma sejunctum *Sow.*

SEPARATING TRICHOLOMA

(Hym. Europ. p. 48. Syl. Fung. Vol. V, p. 88.)

Pileus fleshy, convex then expanded, umbonate, slightly viscid, streaked with innate brown or blackish fibrils, whitish or yellowish, sometimes greenish-yellow, flesh white, fragile; lamellæ broad, subdistant, rounded behind or emarginate, white; stem solid, stout, often irregular, white; spores subglobose, .00025 in. broad.

Pileus 1 to 3 in. broad; stem 1 to 3 in. long, 4 to 8 lines thick.

Mixed woods. Suffolk county. September.

The plants referred to this species are not uncommon on Long Island, growing in sandy soil in woods of oak and pine. They are usually more or less irregular and the pileus becomes fragile. It is quite variable in color, sometimes approaching a smoky-brown hue, again being nearly white. The taste of the typical form is said to be bitter, but the flavor of our plant is scarcely bitter. In other respects, however, it agrees well with the description of the species.

Tricholoma terriferum *Pk.*

EARTH-BEARING TRICHOLOMA

(N. Y. State Mus. Rep. 41, p. 60.)

Pileus broadly convex or nearly plane, irregular, often wavy on the margin, glabrous, viscid, pale-alutaceous, generally soiled with adhering particles of earth carried up in its growth, flesh white,

with no decided odor; lamellæ thin, *crowded*, slightly adnexed, white, not spotted or changeable; stem equal, short, solid, white, *floccose-squamulose at the apex*; spores minute, subglobose, .00012 in. long.

Pileus 3 to 4 in. broad; stem 1 to 1.5 in. long, 6 to 8 lines thick.

Woods. Catskill mountains. September.

Tricholoma resplendens Fr.

RESPLENDENT TRICHOLOMA

(Hym. Europ., p. 49. Syl. Fung., Vol. V, p. 90.)

Pileus fleshy, convex then nearly plane, even, glabrous, *viscid*, *white*, sometimes hyaline-spotted or yellowish on the disk, shining when dry, the *margin straight*, flesh white, taste mild, odor pleasant; lamellæ nearly free when young, then emarginate, somewhat crowded, rather thick, entire, white; stem *solid*, glabrous, subbulbous, even, dry, white; spores .0003 in. long, .00016 broad.

Pileus 2 to 4 in. broad; stem 2 to 3 in. long, 4 to 8 lines thick.

Thin woods. Catskill mountains. September.

This species, which is rare with us, is distinguished from all our remaining white species by its viscid pileus.

Lamellæ becoming discolored or red-spotted.

Tricholoma Russula Schæff.

REDDISH TRICHOLOMA

(Hym. Europ. p. 52. Syl. Fung., Vol. V, p. 94. *Agaricus rubicundus*. Report 26, p. 51.)

Pileus fleshy, convex, becoming plane or centrally depressed, obtuse, viscid, even or dotted with granular squamules on the disk, *red or incarnate*, the margin usually paler, involute and minutely downy in the young plant, flesh white, sometimes tinged with red, taste mild; lamellæ subdistant, rounded behind or subdecurrent, white, often becoming red-spotted with age; stem solid, firm, whitish or rose-red, squamulose at the apex; spores elliptical, .00028 in. long, .00016 broad.

Pileus 3 to 5 in. broad; stem 1 to 2 in. long, 6 to 8 lines thick.

Mixed woods. Albany, Cattaraugus and Steuben counties. September and October.

According to the description the typical plant has the pileus incarnate and the stem rosy-red, but in the American plant the pileus is generally more clearly red and the stem white, though this is often varied with reddish stains. These discrepancies in our plant led to its publication as a distinct species, but in Mycological Illus-

trations, fig. 926, *T. Russula* is represented with a bright red pileus, and it has seemed best to refer our plant to that species. The disk in it is often squamulose-dotted, rather than granulated. The species is recorded edible, but I have not tested it.

Tricholoma transmutans *Pk.*

CHANGING TRICHOLOMA

(N. Y. State Mus. Rep. 29, p. 38.)

Pileus convex, *nearly glabrous*, viscid when moist, brownish, reddish-brown or tawny-red, usually paler on the margin, flesh white, taste and odor farinaceous; lamellæ narrow, close, sometimes branched, whitish or pale-yellowish, becoming dingy or reddish-spotted when old; stem equal or slightly tapering upward, *glabrous* or slightly silky-fibrillose, stuffed or hollow, whitish, often marked with reddish stains or becoming reddish-brown toward the base, white within; spores subglobose, .0002 in. broad.

Pileus 2 to 4 in. broad; stem 3 to 4 in. long, 3 to 6 lines thick.

Woods. Albany, Rensselaer and Essex counties. August to September.

The plants are often cæspitose. The species is related to a group of closely allied forms including *T. fulvellum*, *T. albobrunneum*, *T. ustale* and *T. pessundatum*, from all of which it is distinguished by its farinaceous odor. It is also related to *T. flavobrunneum* and *T. frumentaceum*, which have a similar odor, but from which it differs in its subglobose, smaller spores. I suspect that *Agaricus frumentaceus* of Curtis' catalogue belongs to this species. Both the pileus and stem, as well as the lamellæ, are apt to assume darker hues with age or in drying, and this character suggested the specific name. The species is classed as edible.

Tricholoma Peckii *Howe.*

PECK'S TRICHOLOMA

(Bull. Torrey Bot. Club, vol. vi, p. 66.)

Pileus convex or nearly plane, viscid when moist, *squamulose*, tawny-red inclining to tawny-orange, flesh white, odor farinaceous; lamellæ narrow, close, sometimes branched, white; stem equal or slightly thickened at the base, *squamulose*, white at the top, elsewhere colored like the pileus; spores minute, broadly elliptical or subglobose, .00016 to .0002 in. long.

Pileus 2 to 3 in. broad; stem 2 to 3 in. long, 4 to 6 lines thick.

Thin woods. Rensselaer, Cattaraugus and Steuben counties and Catskill mountains. August and September.

This is a beautiful species, but it does not retain its colors well in drying. It is somewhat similar in appearance to the preceding species, but it is easily distinguished from all the related ones by its squamulose pileus and stem. As in the allied species, its lamellæ become discolored or spotted with age. It is perhaps edible, but I have not yet had an opportunity to test it, and the taste, though at first farinaceous and pleasant, is sometimes followed by a bitterish unpleasant flavor. In wet weather the margin of the pileus and upper part of the stem are sometimes studded with drops of moisture of a reddish or orange color.

Genuina

Pileus neither moist nor viscid, generally floccose-squamose or fibrillose, flesh soft, not hygrophanous, the margin at first involute and submentose.

The species of this tribe as well as those of the preceding one may be arranged in two groups depending on the character of the lamellæ. In one the color of the lamellæ is unchangeable in the other it changes with age. Some of the species have a slight farinaceous odor, at least when broken, others are inodorous. In most of them the pileus is adorned with squamules or fibrils.

- | | |
|--|----------------|
| Lamellæ neither changing color nor becoming spotted..... | 1 |
| Lamellæ changing color or becoming spotted | 6 |
| 1. Pileus white, taste not farinaceous | Columbetta. |
| 1. Pileus white, squamulose, taste farinaceous | grande. |
| 1. Pileus not pure white..... | 2 |
| 2. Lamellæ yellow | rutilans. |
| 2. Lamellæ not clearly yellow | 3 |
| 3. Lamellæ transversely striate..... | striatifolium. |
| 3. Lamellæ not transversely striate..... | 4 |
| 4. Pileus glabrous | flavescens. |
| 4. Pileus not glabrous..... | 5 |
| 5. Stem squamose, tawny or ochraceous | decorosum. |
| 5. Stem fibrillose, white | scalpturatum. |
| 6. Pileus with reddish brown or tan colored hues | 7 |
| 6. Pileus some other color..... | 9 |
| 7. Stem subbulbous, white | tricolor. |
| 7. Stem equal or nearly so, not white | 8 |
| 8. Stem solid | imbricatum. |
| 8. Stem hollow..... | vaccinum. |

9. Lamellæ whitish, becoming cinereous terreum.
 9. Lamellæ becoming blackish 10
 10. Lamellæ subdistant, pileus brown fuligineum.
 10. Lamellæ crowded, pileus whitish fumescens.

Lamellæ not changing color or becoming spotted.

Tricholoma decorosum Pk.

DECOROUS TRICHOLOMA

(N. Y. State Mus. Rep., 25, p. 73. Plate 1, figs. 1-4.)

Pileus firm, at first hemispherical, then convex or nearly plane, adorned with numerous *brownish subsquarrose tomentose scales*, dull ochraceous or tawny, flesh white; lamellæ close, rounded and slightly emarginate behind, the edge subcrenulate; stem solid, equal or slightly tapering upward, white and smooth at the top, elsewhere *tomentose-squamulose* and colored like the pileus; spores broadly elliptical, .0002 in. long, .00015 broad.

Pileus 1 to 2 in. broad; stem 2 to 4 in. long, 2 to 4 lines thick.

Decaying trunks of trees. Catskill mountains and Allegany county. September and October.

A rare but beautiful species. It is often *cæspitose*. It departs from the character of the genus in growing on decayed wood. It bears some resemblance to *Clitocybe decora* Fr., from which it differs in color, in the character of the scales of the pileus and stem and in the color of the flesh and lamellæ. The true relationship of that species may be regarded as yet unsettled. Fries at one time placed it in *Pleurotus* at another in *Clitocybe*. Gillet has referred it to *Clitocybe*, Quelet to *Tricholoma*, and Saccardo to *Pleurotus*. But it seems to me that the American plant here described belongs to the genus *Tricholoma* notwithstanding its unusual habitat. The emarginate lamellæ and the solid fleshy stem indicate it.

Tricholoma rutilans Schæff.

REDDISH TRICHOLOMA

(Hym. Europ., p. 53. Syl. Fung., Vol. V, p. 96.)

Pileus fleshy, campanulate becoming plane, dry, at first *covered with a dark-red or purplish tomentum*, then somewhat squamulose, the margin thin, at first involute, flesh yellow; lamellæ crowded, rounded, *yellow, thickened and villose on the edge*; stem somewhat hollow, nearly equal or slightly thickened or bulbous at the base, soft, pale-yellow variegated with red or purplish floccose squamules; spores .00025 to .0003 in. long, .00025 broad.

Pileus 2 to 4 in. broad; stem 2 to 4 in. long, 5 to 8 lines thick.

On or about pine stumps, rarely on hemlock trunks. Rensselaer, Albany, Oneida, Lewis, Cattaraugus and Fulton counties. July to November.

The species is somewhat variable in size and color. When old the pileus sometimes becomes yellowish, variegated with purplish or reddish stains. The villosity on the edge of the lamellæ is not always equally developed. *T. variegatum* of the Twenty-third Report, page 74, is probably only a small form of this species having the edges of the lamellæ nearly naked.

Tricholoma scalpturatum Fr.

SCRATCHED TRICHOLOMA

(Hym. Europ., p. 55. Syl. Fung. Vol. V, p. 100. *Agaricus impolitoides* N. Y. State Mus. Rep. 32, p. 25.)

Pileus at first conical or convex, then expanded, obtuse, dry, covered with tomentum which at length forms *brownish or reddish floccose scales*, *whitish*, flesh whitish; lamellæ somewhat crowded, emarginate, whitish, sometimes becoming yellowish when old; stem equal, solid or stuffed, fibrillose, white; spores elliptical, .00025-.0003 in. long; .00016 to .0002 broad.

Pileus 2 to 3 in. broad; stem 2 to 3 in. long, 3 to 6 lines thick.

Woods. Saratoga county. August.

Our plant has a farinaceous taste, about which nothing is said in the description of the European plant. In other respects the characters are well sustained by it.

Tricholoma flavescens Pk.

PALE-YELLOWISH TRICHOLOMA

(N. Y. State Mus. Rep. 26, p. 51.)

Pileus convex, firm, often irregular, dry, *slightly silky, becoming glabrous*, sometimes cracking into minute scales on the disk, *whitish or pale yellow*, flesh whitish or yellowish; lamellæ close, white or pale-yellow, emarginate, floccose on the edge; stems firm, solid, often unequal, central or sometimes eccentric, single or cæspitose, colored like the pileus; spores subglobose, .0002 in. in diameter.

Pileus 2 to 3 in. broad; stem 1 to 2.5 in. long, 4 to 6 lines thick.

Pine stumps. Albany and Rensselaer counties. October.

The species seems to be related to *T. rutilans* but has not the red or purplish tomentum of that fungus. It, like *T. decorosum*, is always lignicolous, *T. rutilans* is sometimes so.

Tricholoma Columbetta Fr.

DOVE-COLORED TRICHOLOMA

(Hym. Europ., p. 55. Syl. Fung., Vol. V, p. 99.)

Pileus convex, then nearly plane, fleshy, obtuse, rigid, somewhat flexuous, dry, at first *glabrous*, then *silky-fibrillose*, becoming even or squamulose, *white*, the margin at first *involute*, more or less tomentose, flesh white, taste *mild*; lamellæ close, emarginate, thin, white; stem stout, solid, unequal, nearly glabrous, white; spores, .00028 to .0003 in. long, .00016 to .0002 broad.

The species is very variable and the following varieties have been described.

Var. A. Pileus nearly always repand or lobed, at first glabrous, even, at length rimose-squamose, often reddish-spotted, the margin when young inflexed, tomentose; stem obese, even, unequal, swollen, an inch thick. The typical form.

Birch woods among mosses.

Var. B. Pileus subflexuous, silky-fibrillose, at length squamulose, sometimes fuscous-spotted, the margin scarcely tomentose; stem longer, equal or slightly narrowed at the base.

Bushy places. Intermediate between A. & C.

Var. C. Pileus regular, flattened, evidently fibrillose, sometimes spotted with blue, four inches broad; stem equal, cylindrical, fibrillose-striate, four inches long.

Beech woods. A showy variety so diverse from variety A that it might be regarded as a distinct species, did not variety B connect them and so much resemble both that it might with equal propriety be referred to either.

Pileus 2 to 4 in. broad; stem 1 to 4 in. long, 3 to 12 lines thick.

Woods and pastures. Albany county.

It may be distinguished from *T. album* by its mild taste. It is recorded as edible.

Tricholoma grande Pl.

GRAND TRICHOLOMA

(N. Y. State Mus. Rep., 44, p. 128.)

Pileus thick, firm, hemispherical, becoming convex, often irregular, dry, *squamulose*, somewhat silky-fibrillose toward the margin, *white*, the margin at first *involute*, flesh grayish-white, taste *farinaceous*; lamellæ close, rounded behind, adnexed, white; stem stout, solid, fibrillose, at first tapering upward, then equal or but slightly thickened at the base, pure white; spores elliptical, .00035 to .00045 in. long, .00024 broad.

Pileus 4 to 5 in. broad; stem 2 to 4 in. long, 1 to 1.5 in. thick.

Among fallen leaves in woods. Cattaraugus county. September.

The plants are often cæspitose, and then the pileus is more or less irregular and the lamellæ somewhat lacerated. The species is related to *T. Columbetta*, from which its larger size, constantly squamulose pileus, more cæspitose mode of growth, larger spores and farinaceous taste separate it. The squamules of the pileus are brownish, and the pileus itself is sometimes slightly dingy on the disk. The young margin is pure white like the stem, and both it and the upper part of the stem are sometimes studded with drops of moisture.

The plant was found on trial to be edible, but not of first quality. The flesh is not very tender, nor the flavor captivating even in young specimens.

Tricholoma striatifolium *Pk.*

STRIATE-LEAVED TRICHOLOMA

(N. Y. State Mus. Rep. 30, p. 37.)

Pileus convex or nearly plane, dry, subglabrous, somewhat shining, often obscurely dotted or squamulose with innate fibrils, grayish or grayish-brown, sometimes tinged with red, flesh white; lamellæ rather close, rounded behind, *transversely striated or venose*, white; stem slightly thickened at the base, *hollow*, white; spores subglobose or broadly elliptical, .00016 to .0002 in. long.

Pileus 2 to 3 in. broad; stem 1 to 2 in. long, 3 to 6 lines thick.

Woods. Saratoga county. October.

A rare species collected but once. The striate appearance of the lamellæ is due to the presence of small transverse vein-like elevations. The stem is of a pure chalky-white color. The odor is perceptible and peculiar.

Lamellæ changing color or becoming spotted.

Tricholoma tricolor *Pk.*

THREE-COLORED TRICHOLOMA

(N. Y. State Mus. Rep. 41, p. 60.)

Pileus broadly convex or nearly plane, sometimes slightly depressed in the center, firm, dry, obscurely striate on the margin *pale-alutaceous inclining to russet*, flesh whitish; lamellæ thin, narrow, close, adnexed, *pale-yellow, becoming brown or purplish-brown* in drying; stem stout, short, firm, tapering upward from the thickened or subbulbous base, *white*; spores broadly elliptical or subglobose, .0003 in. long.

Pileus 2 to 4 in. broad; stem 2 to 3 in. long, 6 to 12 lines thick.

Woods. Albany county. August.

The species is remarkable for its varied colors and for the peculiar hue assumed by the dried lamellæ.

Tricholoma imbricatum Fr.

IMBRICATED TRICHOLOMA

(Hym. Europ., p. 56. Syl. Fung., Vol. V, p. 101.)

Pileus fleshy, *compact*, convex or nearly plane, obtuse, dry, innately squamulose, fibrillose toward the margin, brown or reddish brown, the margin thin, at first slightly *inflexed and pubescent*, then *naked*, flesh firm, thick, white; lamellæ slightly emarginate, almost adnate, rather close, white when young, becoming reddish or spotted; stem *solid*, firm, nearly equal, fibrillose, white and mealy or pulverulent at the top, elsewhere colored like the pileus; spores .00025 in. long, .00016 to .0002 broad.

Pileus 2 to 4 in. broad; stem 2 to 3 in. long, 4 to 10 lines thick.

Under or near coniferous trees. Greene and Essex counties. September and October.

This is an edible species. It has a farinaceous odor and taste when fresh.

Tricholoma vaccinum Pers.

VACCINE TRICHOLOMA

(Hym. Europ., p. 56, Syl. Fung., Vol. V., p. 102.)

Pileus fleshy, convex or *campanulate*, becoming nearly plane, umbonate, dry, floccose-squamose, reddish-brown, the margin *involute, tomentose*, flesh white; lamellæ adnexed, subdistant, whitish, then reddish or reddish-spotted; stem equal, *hollow*, covered with a fibrillose bark, naked at the apex, whitish-rufescent; spores subglobose, .00024 in. long.

Pileus 1 to 3 in. broad; stem 2 to 3 in. long, 4 to 6 lines thick.

Under or near coniferous trees. Greene and Essex counties. September and October.

This species resembles the preceding one from which it may be distinguished by the tomentose margin of the pileus and the stuffed or hollow stem. In the American plant the pileus is sometimes streaked with innate fibrils and sometimes becomes longitudinally rimose. It is not always umbonate. It has a farinaceous taste.

Both it and the preceding species are somewhat gregarious and occur in the same localities. They are especially found in groves or thickets of young spruce trees.

***Tricholoma terreum* Schæff.**

EARTH-COLORED TRICHOLOMA

(Hym. Europ., p. 57. Syl. Fung., Vol. V, p. 104.)

Pileus fleshy, thin, soft, convex campanulate or nearly plane, obtuse or umbonate, *innately fibrillose* or *floccose-squamose*, cinereous fuscous grayish-brown or mouse-color, flesh white or whitish; lamellæ adnexed, subdistant, more or less eroded on the edge, *white becoming cinereous*; stem equal, varying from solid to stuffed or hollow, fibrillose, white or whitish; spores broadly elliptical, .00024 to .00028 in. long, .00016 to .0002 broad.

Pileus 1 to 3 in. broad; stem 1 to 2 in. long, 2 to 4 lines thick.

Woods. Albany, Rensselaer and Cattaraugus counties. September to November.

Var. *fragrans* n. var. Pileus innately fibrillose, obtuse, odor farinaceous. Dutchess county.

This is a very variable species and European authors do not fully agree upon the characters that belong to it. According to Fries it is subinodorous, but Stevenson says it is inodorous. One author describes the spores as "nearly spherical," .0002 in. long, another says they are .00024 to .00028 in. long, .00016 broad. The spores of our plant agree closely with the latter measurement. The plants are sometimes gregarious, sometimes cæspitose. The larger forms often have the pileus obtuse fibrillose or squamulose and less regular, the smaller ones more regular, more floccose-squamulose and often with a very small umbo or papilla. I find this form especially in pine woods. It varies considerably in color and is a pretty little plant. The variety *fragrans* is generally a little larger and is edible, though it retains somewhat of the farinaceous flavor. This appears to be common farther south, and I suspect that *Agaricus hypopythius* of Curtis' Catalogue is the same thing.

T. argyreum Bull., in which the lamellæ and commonly the pileus also are pure white is considered by Fries as a subspecies of *T. terreum*. *T. argyreum* Kalchb. he thinks is the same as Bulliard's plant. *T. atosquamosum* Chev., in which the whitish or cinereous umbonate pileus is adorned with minute black scales, and *T. orirubens* Quel., in which the lamellæ have a rosy-red edge, are also made subspecies of *T. terreum* by Stevenson.

Tricholoma fumescens *Pk.*

SMOKY TRICHOLOMA

(N. Y. State Mus. Rep. 31, p. 32.)

Pileus convex or expanded, dry, clothed with a very minute appressed tomentum, whitish; lamellæ narrow, crowded, rounded behind, whitish or pale cream color, *changing to smoky-blue or blackish* where bruised; stem short, cylindrical, whitish; spores oblong-elliptical, .0002 to .00025 in. long.

Pileus 1 in. broad; stem 1 to 1.5 in. high, 2 to 3 lines thick.

Woods. Columbia county. October. Rare.

The species is remarkable for the smoky or blackish hue assumed by the lamellæ when bruised and also in drying. It is apparently related to *T. immundum* Berk., but in that species the whole plant becomes blackish when bruised, and the lamellæ are marked with transverse lines and tinged with pink.

Tricholoma fuligineum *Pk.*

SOOTY TRICHOLOMA

(N. Y. State Mus. Rep. 41, p. 60.)

Pileus convex or nearly plane, obtuse, often irregular, dry, minutely squamulose, *sooty-brown*, flesh grayish, odor and taste farinaceous; lamellæ subdistant, uneven on the edge, cinereous *becoming blackish in drying*; stem short, *solid*, equal, glabrous, cinereous; spores oblong-elliptical, .0003 in. long, .00016 broad.

Pileus 1 to 2.5 in. broad; stem 1 to 1.5 in. long, 3 to 5 lines thick.

Among mosses in open places. Greene county. September. Rare.

Rigida

Pileus rigid, in compact species hard and somewhat cartilaginous, in thinner species very fragile, the margin naked, the pellicle of the pileus rigid, punctate granulate, or broken up when dry into small smooth scales, neither viscid, floccose-scaly nor torn into fibrils.

No representative.

Sericella

Pileus at first slightly silky, soon becoming glabrous, very dry, neither moist, viscid, hygrophanous nor distinctly scaly, rather thin, opaque, absorbing moisture, but the flesh of the same color as the lamellæ; stem fleshy, fibrous.

T. fallax and *T. infantile* are somewhat moist in wet weather, but are placed in this group because of their manifest nearness to species belonging to it. The same is true of *T. albiflavium*.

- | | |
|---|------------------|
| Pileus white or whitish, often darker on the disk or umbo.... | 1 |
| Pileus some other color | 5 |
| 1. Pileus acutely umbonate | subacutum. |
| 1. Pileus not acutely umbonate | 2 |
| 2. Lamellæ subdistant | 3 |
| 2. Lamellæ crowded | 4 |
| 3. Plant inodorous, pileus wholly white | silvaticum. |
| 3. Plant with a strong odor, pileus darker on the disk.. | terræolens. |
| 4. Stem slightly bulbous | albiflavum. |
| 4. Stem not at all bulbous | lascivum. |
| 5. Stem solid | 6 |
| 5. Stem hollow | 7 |
| 6. Lamellæ white, pileus pale tan color | lascivum. |
| 6. Lamellæ and pileus yellowish... .. | chrysenteroides. |
| 7. Lamellæ yellow | fallax. |
| 7. Lamellæ whitish | infantile. |

Tricholoma subacutum *Pk.*

SUBACUTE TRICHOLOMA

(N. Y. State Mus. Rep. 42, p. 16.)

Pileus at first ovate or broadly conical, then convex and *subacutely umbonate*, dry, silky and obscurely virgate with *minute innate fibrils*, *whitish*, tinged with smoky-brown or bluish-gray, darker on the umbo, flesh white, taste acrid or peppery; lamellæ rather close, slightly adnexed, white; stem equal, *stuffed or hollow*, silky-fibrillose, white; spores broadly elliptical or subglobose, .00025 to .0003 in. long, .0002 to .00025 broad.

Pileus 1.5 to 3 in. broad; stem 2 to 4 in. long, 3 to 6 lines thick.

Woods and groves. Essex county. September.

This species is perhaps too closely related to *T. virgatum*, but it is separable by its prominent subacute umbo, paler pileus, hollow stem and hot or peppery taste. The cuticle is separable from the pileus.

Tricholoma silvaticum *Pk.*

WOOD TRICHOLOMA

(N. Y. State Mus. Rep. 42, p. 17.)

Pileus convex or nearly plane, dry, *glabrous*, *subumbonate*, whitish; lamellæ broad, ventricose, subdistant, adnexed, white; stem subequal, *solid*, white; spores *rather large*, elliptical, .00045 to .0005 in. long, .0003 broad.

Pileus 1 to 1.5 in. broad; stem 1 to 2 in. long, 2 to 4 lines thick.

Mossy ground in woods. Essex county. September.

The whole plant is white or whitish, as in *T. leucocephalum*, from which it is separated by its subdistant lamellæ, somewhat umbonate pileus and by the absence of any farinaceous odor.

***Tricholoma terræolens* Pk.**

EARTH-SMELLING TRICHOLOMA

(N. Y. State Mus. Rep. 38, p. 84.)

Pileus thin, convex or nearly plane, slightly silky-fibrillose, whitish with a brownish or grayish-brown slightly prominent disk, *taste and odor strong, unpleasant*; lamellæ subdistant, emarginate, white; stem equal, slightly silky, shining, *stuffed or hollow*, white; spores subglobose or broadly elliptical, .00025 to .0003 in. long, .0002 to .00025 broad.

Pileus 10 to 15 lines broad; stem 1 to 1.5 in. long, about 2 lines thick.

Under ground hemlock, *Taxus Canadensis*. Saratoga county. September.

The species is related to *T. inamœnum*, from which it is separated by its smaller size, less distant lamellæ, stuffed or hollow stem and different odor. Nor is the stem radicating or the disk tinged with yellow as in that species. The odor is decidedly earthy, resembling that of vegetable mold or mossy rocks. Its taste is similar to its odor and remains in the mouth and throat a long time.

***Tricholoma lascivum* Fr.**

DISGUSTING TRICHOLOMA

(Hym. Europ., p. 65, Syl. Fung., Vol. V., p. 112.)

Pileus fleshy, convex or nearly plane, obtuse, at length somewhat depressed, silky, then glabrous, even, whitish or pale tan color, the margin at first involute, flesh white; lamellæ adnexed, thin, *crowded, white*; stem solid, equal, rigid, *rooting and tomentose at the base*, fibrillose, white; spores .0003 to .0004 in. long, .00014 broad.

Pileus 1 to 2 in. broad; stem 2 in. long, 2 to 4 lines thick.

Open places. Albany county. September.

The European plant has the pileus pallid-tan color and has a strong odor. In our plant there was no marked odor and the pileus was nearly white.

***Tricholoma albiflavum* Pk.**

YELLOWISH-WHITE TRICHOLOMA

(N. Y. State Cabinet Rep., 23, p. 75.)

Pileus fleshy, convex, becoming plane or slightly depressed, glabrous, even, *white sometimes tinged with yellow*, the margin at first involute, flesh white; lamellæ narrow, crowded, thin, emarginate,

white; stem equal, solid, fibrillose-striate, *somewhat bulbous*, whitish; spores elliptical, .0003 to .00035 in. long, .00016 to .0002 broad.

Pileus 2 to 3 in. broad; stem 3 to 4 in. long, 3 to 4 lines thick.

Woods and fields. Essex and Rensselaer counties. August.

This species is very closely allied to the preceding one of which it is perhaps only a variety. It is separable by the pileus which varies in color from white to yellowish and by the stem which is slightly bulbous thickened at the base but not radicated. The stem is generally very slender in proportion to the size of the pileus. This is sometimes slightly and broadly umbonate. In very wet weather the pileus is moist but the species has been placed here because of its affinity with *T. lascivum*.

Tricholoma chrysenteroides *Pk.*

GOLDEN-FLESH TRICHOLOMA

(N. Y. State Mus. Rep. 24, p. 60.)

Pileus fleshy, convex or plane, not at all umbonate, firm, dry, glabrous or slightly silky, *pale-yellow or buff*, becoming dingy with age, the margin sometimes reflexed, *flesh pale-yellow*, taste and odor *farinaceous*; lamellæ rather close, emarginate, yellowish, becoming dingy or pallid with age, *marked with transverse veinlets along the upper edge*, the interspaces venose; stem equal, firm, *solid*, glabrous, fibrous-striate, yellowish without and within; spores elliptical, .0003 to .0004 in. long, .0002 to .00024 broad.

Pileus 1 to 2 in. broad; stem 2 to 3 in. long, 3 to 4 lines thick.

Woods. Lewis and Cattaraugus counties. September.

Nearly allied to *T. chrysenterum*, but separable by the lamellæ, which are somewhat veiny and not free, by the entire absence of an umbo and by its farinaceous odor and taste.

Tricholoma fallax *Pk.*

FALLACIOUS TRICHOLOMA

(N. Y. State Mus. Rep. 25, p. 74. Plate 1, figs 5 to 8.)

Pileus firm, convex or nearly plane, rarely centrally depressed, moist in wet weather, glabrous, dull saffron, subochraceous or reddish yellow, flesh yellowish when dry; lamellæ narrow, close, tapering outwardly, rounded behind, *yellow*; stem short, glabrous, slightly tomentose at the base, equal or tapering downward, *stuffed or hollow*, colored like the pileus; spores minute, elliptical, .00012 to .00016 in. long.

Pileus 6 to 15 lines broad; stem about 1 in. long, 1 to 2 lines thick.

Under spruce and balsam trees. Essex, Lewis, Herkimer and Onondaga counties. August and September.

This pretty little agaric is liable to be mistaken for a species of *Naucoria*, because of its peculiar colors, but its spores are white. It is apparently closely related to *T. cerinum*, but the pileus of that species is described as very dry, the flesh white and the stem glabrous at the base, characters which are not well shown by our plant. Because of its affinity to *T. cerinum* it has been placed in the tribe *Sericella* notwithstanding its pileus is moist in wet weather.

Tricholoma infantile *Pk.*

INFANTILE TRICHOLOMA

(Bulletin N. Y. State Mus., Vol. 1, Number 2.)

Pileus thin, convex or nearly plane, even, minutely silky, *moist in wet weather, reddish-gray*, the margin at first incurved and whitish: lamellæ subdistant, plane or slightly ventricose, often eroded on the edge, whitish; stem short, equal or tapering upward, hollow, slightly silky, colored like the pileus or a little paler; spores broadly elliptical, .0003 to .00035 in. long, .0002 to .00025 broad, often containing a shining nucleus.

Pileus 4 to 12 lines broad; stem 1 to 1.5 in. long, 1 to 2 lines thick.

Gravelly soil in fields. Rensselaer county. June.

This small species is apparently related to *P. cœlatum*, from which it is separated by its pileus which is not at all umbilicate, but on the other hand is sometimes papillate. The stem is fleshy-fibrous and hollow but its cavity is very small. In the larger specimens the margin of the pileus is often wavy or irregular and the edge of the lamellæ eroded. This and the preceding species by being somewhat moist in wet weather form a transition to the next Series.

SERIES B

Pileus glabrous, either watery-spotted, moist or hygrophanous, not viscid, its flesh very thin or becoming soft or spongy; veil pruinose.

Guttata

Pileus fleshy, soft, fragile, spotted as if by drops or rivulose; stem solid. Mostly vernal, growing in troops or cœspitose.

No representative.

Spongiosa

Pileus compact, becoming spongy, fleshy quite to the margin, obtuse, even, glabrous, moist; stem stout, fibrous-spongy, commonly thickened at the base; lamellæ at length spuriously but sinuately decurrent.

Mostly autumnal, growing in troops. *T. album*. *T. nobile* and *T. laterarium*, though having the pileus dry, are placed in this group because of their affinities and their agreement with it in other respects.

- | | |
|--|----------------|
| Lamellæ reticulately connected | patulum. |
| Lamellæ distinct..... | 1 |
| 1. Pileus wholly white or white tinged with yellow rust color... | 2 |
| 1. Pileus some other color | 6 |
| 2. Stem hollow..... | leucocephalum. |
| 2. Stem solid | 3 |
| 3. Margin of the pileus with subdistant short radiating ridges | laterarium. |
| 3. Margin of the pileus even | 4 |
| 4. Lamellæ changing color with age..... | grave. |
| 4. Lamellæ not changing color..... | 5 |
| 5. Pileus glabrous..... | album. |
| 5. Pileus minutely squamulose..... | nobile. |
| 6. Lamellæ at first violaceous | personatum. |
| 6. Lamellæ at first white or whitish..... | 7 |
| 7. Lamellæ becoming tawny or subochraceous | grave. |
| 7. Lamellæ not assuming this color..... | 8 |
| 8. Pileus greenish | virescens. |
| 8. Pileus smoky-yellow..... | fumosiluteum. |
| 8. Pileus whitish tinged with brown | fumidellum. |

Tricholoma patulum Fr.

WIDE TRICHOLOMA

(Hym. Europ. p. 69. Syl. Fung., Vol. v, p. 125. *Clitocybe patuloides*. N. Y. State Mus. Rep., 32, p. 25.)

Pileus fleshy, firm, convex, or plane, obtuse, often repand, even, glabrous, pale cinereous inclining to yellowish, flesh white; lamellæ emarginate, crowded, *reticulately connected*, white; stem thick, solid, firm, equal, elastic, glabrous, white or whitish; spores subglobose or broadly elliptical, .00025 to .0003 in. long.

Pileus 1 to 4 in. broad; stem 2 to 3 in. long, 4 to 10 lines thick.

Thin woods and groves. Onondaga county. September.

The American plant differs slightly from the description of the European, in having the lamellæ somewhat decurrent, and on this account it was formerly referred to the genus *Clitocybe* and described as distinct. The spore characters here given are taken from the American plant.

***Tricholoma album* Schæff.**

WHITE TRICHOLOMA

(Hym. Europ., p. 70. Syl. Fung., Vol. v, p. 127.)

Pileus fleshy, tough, convex, becoming plane or depressed, obtuse, very dry, even, *glabrous, white*, sometimes yellowish on the disk, rarely wholly yellowish, the margin at first involute, flesh white, taste *acrid or bitter*; lamellæ emarginate, somewhat crowded, distinct, white; stem solid, elastic, equal or tapering upward, externally fibrous, obsoletely pruinose at the apex, white; spores elliptical, .0002 to .00025 in. long.

Pileus 2 to 4 in. broad; stem 2 to 4 in. long, 4 to 6 lines thick.

Woods. Common. Albany, Essex, Herkimer, Cattaraugus and Greene counties. August to October.

This species is variable in color and in size, being sometimes robust, sometimes slender. It grows singly, in troops or in tufts. It has no decided odor but a bitter unpleasant taste. It departs from the character of the tribe in having the pileus quite dry and on this account, as Fries remarks, it might perhaps be better placed in the tribe *Sericella*. The same remark is applicable to the two following species. The variety *caesariatus* differs from the typical form in having the pileus thin, and at first silky, the lamellæ almost free and the slender fragile stem somewhat pruinose at the apex. *T. alboides*, Report 32, p. 25, apparently belongs to this variety.

***Tricholoma nobile* Pk.**

NOBLE TRICHOLOMA

(N. Y. State Mus. Rep. 42, p. 17.)

Pileus fleshy, convex or nearly plane, dry, *minutely punctate or squamulose with innate fibrils*, whitish or tinged with yellow, flesh white, taste unpleasant; lamellæ broad, rather close, *rounded behind and slightly adnexed*, white, slowly changing to pale-yellow where wounded; stem equal, solid, slightly floccose-pruinose, whitish; spores minute, subglobose, .00016 to .0002 in. broad.

Pileus 2 to 4 in. broad; stem 1.5 to 2.5 in. long, 4 to 8 lines thick.

Woods. Essex county. September.

This plant might easily be mistaken for *T. album*, so close is the resemblance between them, and yet it is quite distinct by its minute though rather obscure squamules, the insertion of the lamellæ and the subglobose spores. Its taste is very unpleasant and leaves a burning sensation in the mouth and throat for a long time.

Tricholoma laterarium *Pk.*

SIDE-MARKED TRICHOLOMA

(N. Y. State Mus. Rep., 26, p. 51.)

Pileus convex or nearly plane, sometimes slightly depressed in the center, pruinose, whitish, the *disk often tinged with brick-red or brown*, the thin margin marked with slight, subdistant, short radiating ridges, flesh white; lamellæ narrow, crowded, emarginate, decurrent in slight lines, white; stem nearly equal, solid, white; spores globose, .00018 in. broad.

Pileus 2 to 4 in. broad; stem 2 to 3 in. long, 3 to 5 lines thick.

Woods. Otsego and Oneida counties. June and July.

It resembles some forms of *T. album*, but is separable by the markings on the margin of the pileus and by its globose spores.

Tricholoma leucocephalum, *Fr.*

WHITE-CAP TRICHOLOMA

(Hym. Europ., p. 71. Syl. Fung., Vol. v. p. 128.)

Pileus fleshy, thin, tough, convex or plane, obtuse or obtusely umbonate, even, moist, at first *minutely silky, then glabrous, white*, the margin spreading, naked, flesh white, odor farinaceous; lamellæ thin, crowded, rounded behind, free, white; stem *hollow, glabrous, rooting* at the narrowed solid base, subcartilaginous, white.

Pileus 1 to 2.5 in. broad; stem 1 to 2 in. long; 2 to 4 lines thick.

Pine groves. Green county. September.

European authors do not agree in the dimensions ascribed to the spores of this species. In Sylloge Fungorum they are said to be .00036 to .0004 in. long, .00028 to .00032 broad, and according to Lanzi they are .0002 to .00024 in. long, .00016 broad. In our plant they are of the latter dimensions.

Tricholoma fumidellum, *Pk.*

LITTLE-SMOKY TRICHOLOMA

(N. Y. State Mus. Rep. 26, p. 52.)

Pileus convex, then expanded, subumbonate, glabrous, moist, *dingy-white or clay-color clouded with brown*, the disk or umbo generally smoky-brown; lamellæ crowded, subventricose, whitish;

stem equal, glabrous, *solid*, whitish; spores minute, subglobose, .00018 in. long, .00015 broad.

Pileus 1 to 2 in. broad; stem 1.5 to 2.5 in. long, 2 to 3 lines thick.

Woods. Albany county and Catskill Mountains. September and October.

The stem splits easily and the pileus becomes paler in drying. It sometimes becomes rimose-areolate.

Tricholoma virescens *Pk.*

GREENISH TRICHOLOMA

(N. Y. State Mus. Rep. 25, p. 74. *Agaricus viriditinctus*, Rep. 33, p. 36. *Tricholoma viriditinctum*, Syl. Fung., Vol. V., p. 128.)

Pileus convex or nearly plane, sometimes centrally depressed, moist, glabrous, *dingy-green*, the margin sometimes wavy or lobed; lamellæ close, gradually narrowed toward the outer extremity, rounded or slightly emarginate at the inner, white; stem subequal, *stuffed or hollow*, thick but brittle, whitish, sometimes tinged with green; spores broadly elliptical, .0002 in. long, .00015 broad.

Pileus 3 to 5 in. broad; stem 3 to 4 in. long, 6 to 12 lines thick.

Thin woods. Essex county. July.

The dull smoky-green hue of the pileus is the distinguishing feature of this species. The elevation of the Friesian subgenera to generic rank enables me to restore the original name of this species, for *Agaricus virescens* B. and C., which antedated it, now becomes *Leptonia virescens*.

Tricholoma fumosiluteum *Pk.*

SMOKY-YELLOW TRICHOLOMA

(N. Y. State Mus. Rep. 27, p. 92.)

Pileus fleshy, convex or nearly plane, moist, glabrous, *smoky-yellow*, flesh white, tinged with yellow under the cuticle, taste farinaceous; lamellæ broad, close, rounded behind and deeply emarginate, white; stem stout, glabrous, hollow, white, spores subglobose, .00018 to .00024 in. in diameter.

Pileus 2 to 3 in. broad; stem 3 to 4 in. long, 4 to 6 lines thick.

Woods. Sullivan, Cattaraugus, Ulster and Greene counties. September.

The flesh, when cut, emits a farinaceous odor. The plant sometimes grows in tufts. In size and general character it is related to *T. virescens* so closely that it might easily be regarded as a mere yellowish variety of it. The disk of the pileus is often darker than the margin, and the pileus is sometimes spotted.

Tricholoma personatum Fr.

MASKED TRICHOLOMA

(Hym. Europ. p. 72. Syl. Fung., Vol. V. p. 130.)

Pileus compact, becoming soft, thick, convex or plane, obtuse, regular, moist, glabrous, variable in color, generally pallid or cinereous tinged with violet or lilac, the margin at first *involute and villose-pruinose*, flesh whitish; lamellæ broad, crowded, rounded behind, free, *violaceous becoming sordid-whitish or fuscous*; stem generally thick, subbulbous, solid, fibrillose or villose-pruinose, whitish or colored like the pileus; spores *sordid-white*, subelliptical, .0003 to .00035 in. long, .00016 to .0002 broad.

Pileus 2 to 5 in. broad; stem 1 to 3 in. long, 6 to 12 lines thick.

Woods and open places. Common. Albany, Rensselaer, Greene, Delaware, Cattaraugus and Madison counties. September and October.

This species is quite variable in color, but easily recognized after it is known. The pileus is rarely whitish or cinereous, but usually it exhibits dull violaceous or dingy lilac or fuscous hues and the lamellæ are somewhat similar in color. The lamellæ are separable from the hymenophore and the species has for this reason sometimes been placed in the genus *Lepista*. A form occurs in which the stem is decidedly bulbous, and there is also a small form scarcely attaining the dimensions given above. It grows either singly or in troops, rarely in tufts. It is an edible species with tender and well-flavored flesh.

Tricholoma grave Pk.

HEAVY TRICHOLOMA

(N. Y. State Mus. Rep. 43, p. 17.)

Pileus at first hemispherical, then convex, compact, glabrous, *grayish-tawny* and somewhat spotted when moist, paler when dry, the margin paler, irregular, involute, covered with a minute close grayish-white tomentum or silkiness, flesh grayish-white; lamellæ sub-distant, rounded behind or sinuate, adnexed, at first *whitish, then pale-ochraceous or tawny*; stem stout, compact, solid, subsquamulose, grayish-white, penetrating the soil deeply; spores broadly elliptical, .0003 in long, .0002 broad.

Pileus 5 to 8 in. broad; stem 4 in. long, 1 to 1.5 in. thick.

Mixed woods. Suffolk county. September.

This species is remarkable for its great size and weight. It is apparently allied in this respect to *T. Colossus*, from which it is separated by the absence of any viscosity of the pileus, by the

radicating character of the base of the stem and by the flesh not assuming a reddish color. Its moist pileus places it among the Spongiosi rather than the Limacini among which *T. Colossus* is placed.

Hygrophana

Pileus thin, subumbonate, hygrophanous, the flesh at first compact, then soft, very thin toward the margin, moist or watery.

| | |
|--|----------------|
| Stem solid or stuffed..... | 1 |
| Stem hollow | 4 |
| 1. Lamellæ whitish, often tinged with brown or violaceous..... | 2 |
| 1. Lamellæ white or yellowish | 3 |
| 2. Stem less than one inch long | brevipes. |
| 2. Stem one inch or more in length | sordidum. |
| 3. Stem white | Trentonense. |
| 3. Stem not white | microcephalum. |
| 4. Pileus some shade of red | 5 |
| 4. Pileus grayish or brownish | 6 |
| 5. Lamellæ whitish..... | Sienna. |
| 5. Lamellæ alutaceous..... | thujinum. |
| 6. Lamellæ cinereous | putidum. |
| 6. Lamellæ yellowish | Hebeloma. |

Tricholoma brevipes Bull.

SHORT-STEMMED TRICHOLOMA

(Hym. Europ., p. 75. Syl. Fung., Vol. V, p. 135.)

Pileus fleshy, convex becoming plane, rigid, then soft, glabrous, umber or isabelline, becoming pale with age; lamellæ close, ventricose, emarginate, fuscous becoming whitish; stem *very short, solid*, firm, rigid, somewhat thickened at the base, *fuscous*; spores elliptical, .0003 in. long, .0002 broad.

Pileus 1 to 2 in. broad; stem 6 to 9 lines long, 2 to 3 lines thick. Fields and gardens. Albany county. October.

Tricholoma sordidum Fr.

SORDID TRICHOLOMA

(Hym. Europ., p. 77. Syl. Fung., Vol. V, p. 139.)

Pileus thin, campanulate or convex, then plane or centrally depressed, sometimes with a small umbo, often irregular or eccentric, glabrous, hygrophanous, brown with a reddish or violaceous tint and striatulate on the margin when moist, sordid or subcinereous when dry, flesh white; lamellæ thin, moderately close, rounded or sinuately and slightly decurrent, violaceous whitish or fuligin-

ous; stem equal or slightly thickened at the base, solid or stuffed, fibrillose-striate, colored like the pileus, white within; spores elliptical. .00024 to .0003 in. long, .00016 to .0002 broad.

Pileus 1 to 2 in. broad; stem 1.5 to 2 in. long, 2 to 3 lines thick.

Manured ground. Albany county. May.

It sometimes grows in a crowded subcæspitose manner. It has a peculiarly sordid appearance and a strange admixture of colors difficult to describe.

Tricholoma Trentonense *Pk.*

TRENTON TRICHOLOMA

(N. Y. State Mus. Rep. 24, p. 60.)

Pileus thin, convex or nearly plane, often irregular, glabrous or subvirgate, hygrophanous, slightly striatulate on the margin when moist, dingy-white, the disk generally brown; lamellæ very narrow, crowded, slightly emarginate, white inclining to yellowish; stem short, equal, *solid*, slightly striate, *white*; spores .0002 in. long, .00016 broad.

Pileus 1 to 2 in. broad; stem 1 to 1.5 in. long, 3 to 5 lines thick.

Woods on the ground or on decaying wood. Oneida county. September. The plant is gregarious or subcæspitose. It has not been found since its discovery in 1870.

Tricholoma microcephalum *Karst.*

SMALL-CAP TRICHOLOMA

(Syl. Fung., Vol. V, p. 135.)

Pileus fleshy, thin, sooty-livid, when dry isabelline-livid; lamellæ adnexed, very crowded, soft, white; stem tall, stuffed, equal, naked, striatulate, becoming pallid; spores subglobose .0002 to .00024 in. long, .0002 broad.

Pileus 9 to 14 lines broad; stem 2 to 3 in. long, 1 to 2 lines thick.

Meadows and pastures. Essex county. September.

Our specimens do not agree fully with the above description. In color they correspond very closely with the figures of *T. melaleucum* in Mycological Illustrations, but the spore characters agree better with those ascribed to *T. microcephalum*.

Tricholoma Sienna *Pk.*

YELLOWISH-RED TRICHOLOMA

(N. Y. State Rep. 24, p. 60.)

Pileus rather thin, convex then plane or slightly depressed, glabrous, hygrophanous, obscurely striatulate on the extreme margin when moist, *yellowish-red*; lamellæ moderately close, whitish; stem

equal, glabrous, *hollow, colored like the pileus*; spores elliptical, .00024 to .0003 in. long, .00016 to .0002 broad.

Pileus 1 to 2 in. broad; stem 2 to 3 in. long, 3 to 4 lines thick.

Woods. Lewis county. September.

Not found since its discovery in 1870.

Tricholoma thujinum *Pk.*

ARBOR-VITÆ TRICHOLOMA

(N. Y. State Mus. Rep. 26, p. 52.)

Pileus convex or centrally depressed, glabrous, hygrophanous, pale-alutaceous, the margin generally irregular wavy or lobed; lamellæ crowded, thin, abruptly emarginate, *alutaceous*; stem slightly thickened at the top, glabrous, hollow, colored like the pileus, whitish-villose at the base; spores minute, .00016 in. long, about half as broad.

Pileus 1 to 2 in. broad; stem 1 to 1.5 in. long, 2 to 3 lines thick.

Swampy ground under trees of arbor-vitæ, *Thuja occidentalis* Onondaga county. July.

Not found since its discovery in 1872.

Tricholoma putidum *Fr.*

STRONG-SMELLING TRICHOLOMA

(Hym. Europ., p. 78. Syl. Fung., Vol. V, p. 140.)

Pileus somewhat fleshy, hemispherical, umbonate, even, soft, hygrophanous, somewhat olivaceous-gray when moist, hoary when dry, occasionally sprinkled with a white silkiness, odor like that of rancid meal; lamellæ adnexed, appearing free, ventricose, crowded, *cinereous*; stem hollow, soft, fragile, fibrous, equal or subcompressed, pruinose, grayish: spores .0003 to .0004 in. long, .00016 broad.

Pileus about 1 in. broad; stem 1 to 2 in. long, 2 to 3 lines thick.

Pine groves. Greene county. September.

In the New York specimens the pileus is not umbonate, but in other respects they agree well with the description of the species.

Tricholoma Hebeloma *Pk.*

HEBELOMA-LIKE TRICHOLOMA

(N. Y. State Mus. Rep. 26, p. 53.)

Pileus thin, broadly conical or subcampanulate, obtuse, hygrophanous, brown with a darker disk and striatulate on the margin when moist, grayish when dry; lamellæ broad, rounded behind and

deeply emarginate, adnexed, yellowish; stem equal, hollow, glabrous, pallid; spores .00025 in. long, .00016 broad.

Pileus about 5 lines broad; stem 1 in. long, about 1 line thick.

Woods. Otsego county. July.

Agaricus hordus, Rep. 25, p. 73, and *Agaricus præfoliatus*, Rep. 32, p. 55, are both referable to *Collybia platyphylla*, Fr. as large fleshy-stemmed forms.

Agaricus multipunctus, Rep. 25, p. 73, is scarcely distinct from *Clitocybe decora* Fr. and is therefore omitted here.

Agaricus Schumacheri, Rep. 24, p. 60, proves to be a form of *Clitocybe nebularis* Batsch.

Agaricus limonium, Rep. 26, p. 52, is referable to *Collybia scorzonerea* Batsch.

Agaricus lacunosus, Rep. 26, p. 51, has a very tough substance and must be referred to *Collybia*.

Agaricus rubescentifolius, Rep. 39, p. 38, has also been shown by later observations to be a species of *Collybia* and now stands as *Collybia rubescentifolia*.

(F)

FUNGI OF MARYLAND

The fungi recorded in the following pages have been found in Maryland, and most of them have been illustrated and described in a large manuscript volume by Mary E. Banning of Baltimore, Maryland. This volume she has most generously donated to the New York State Museum, and it has been made the basis of the following enumeration. Nearly all the species represented in the volume belong to the larger fleshy fungi and are included among the Hymenomycetes and Gasteromycetes. Of these, 14 have been described as new species and these descriptions have been here transcribed for publication that they may thereby be made more accessible to students of mycology. Remarks have also been freely quoted from the volume when they seemed to have especial interest or scientific value. The name of each species is followed by the name of the locality where it was found, except in the case of very common ones, and by the number of the plate on which it is figured. In some instances different forms or varieties of one species are figured on different plates. The old subgenera of the former genus *Agaricus* are here raised to generic rank, according to the plan of *Sylloge Fungorum*.

| | | |
|--------------------------------|-------------------------------|---------|
| <i>Amanita rubescens Pers.</i> | Druid Hill Park | Plate 1 |
| " " | Eastern Maryland | Plate 2 |
| " " | Halls Spring near Baltimore.. | Plate 3 |

"Found in woods in every section of Maryland from July until September, but very variable in size as well as in depth of color. Plate 2 represents plants collected in Eastern Maryland in 1870, also in woods near Halls Spring, Baltimore county. Its spores are globose."

The plants represented on Plate 2 also have the stem beautifully and distinctly adorned below the annulus with red scales. These and the globose spores indicate that the plant is worthy of distinction as a variety if not as a species.

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|----------------------------|-----------------------|---------|
| <i>Amanita muscaria L.</i> | Eastern Maryland..... | Plate 4 |
| " " | | Plate 5 |
| " " | | Plate 6 |
| " " | | Plate 7 |

Plate 4 represents a large form with pileus yellow; plate 6 a small form with pileus brownish, thereby approaching variety *umbrina*; plate 7 represents a form wholly white.

"I have found the scarlet form in the primeval forests of the eastern shore of Maryland. The white form is not so common as those with a yellow pileus."

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| <i>Amanita solitaria Bull.</i> | Carroll county..... | Plate 8 |
| <i>Amanita strobiliformis Vitt.</i> | Druid Hill Park | Plate 9 |

"I found this plant during the great drought of 1879. The earth was dry and hard, yet some of the plants had reached a very large size. * * * They grew near a spring, which may account for the perfection of the plants. * * * The odor from them was delightful, somewhat resembling that of our edible *A. campestris*, but more powerful. The aroma from the bulb is even greater than from the pileus."

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| <i>Amanita nitida, Fr.</i> | Halls Spring..... | Plate 10 |
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"Common in nearly every woods in Maryland."

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| <i>Amanita phalloides Fr.</i> | Common | Plate 11 |
| <i>Amanita verna Bull.</i> | Druid Hill Park | Plate 12 |
| <i>Amanita spissa Fr.</i> | Carroll county | Plate 174 |

"I have referred this plant to *A. spissa* because it so closely agrees with the description of that species as given in all the books. It must be the American form of that plant. * * * Spores white, globose or subglobose, .00024 inch. The spore measure does not agree with W. G. Smith's measurement which is .0005 in. long, pear shaped or balloon shaped, with a short stalk."

Amanita pellucidula n. sp. Baltimore..... Plate 15

"Pileus at first campanulate, then expanded, slightly viscid, fleshy in the center, attenuated at the margin, smooth, bright red, deeper at the top, shaded into clear transparent yellow at margin, glossy, flesh white, unchanging; lamellæ ventricose, free, numerous, yellow; ring descending, fugacious; stem stuffed. I have named this plant 'pellucidula' because of its bright color. I could not get the spore measure. It has not appeared since July, 1877. I am now, August 20, 1888, under the impression that it is an aborted form or variety of *Amanita cæsarea* Scop. I have met with several like it, near or in company with more perfect larger forms. The stem is white in most cases, or very pale cream color, always ventricose. Spores the same as those of *A. cæsarea*."

The plant figured differs from the true *A. cæsarea* in its brilliantly colored pileus with even margin and in the white stem.

Amanita cæsarea Scop. Common..... Plate 16

" " Plate 17

" " Plate 18

"This plant varies greatly in color. Sometimes the pileus is bright scarlet with yellow margin, then burnt sienna color with yellowish margin. It varies also in size. It generally appears in July and continues until the last of August, and even into September. Its taste is not disagreeable. * * * There is not one doubt that this fungus can be eaten with impunity. The taste is mild and pleasant, it has no disagreeable odor, and it is plentiful."

Amanitopsis vaginata Bull. Druid Hill Park..... Plate 13

" " Plate 14

"For three successive years I found this fungus in Druid Hill Park in one spot, on or about the fifteenth of July. In 1878 it was missing there, but appeared plentiful in a distant wood. In 1880 it again made its apperance in Druid Hill Park, on the fifteenth of July, and under the same tree. There was not the slightest variation in the size or color of the plants that appeared under this tree during the first three years, neither in 1880."

Amanitopsis volvata Peck. Baltimore..... Plate 19*Lepiota Americana* Peck. Druid Hill Park..... Plate 20

" " Carroll county Plate 22

"This figure is from plants found in Carroll county, Maryland. They were plentiful in lawns and gardens, and much larger and more perfect than those found in Druid Hill Park. The pileus is not so red, the margin is plicate and the flesh turns red when cut or bruised, but it does not exude a red juice like the others."

The plants represented on Plate 20 approach very closely to *Lepiota Badhami* B. & Br. but are brighter colored than it.

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| <i>Lepiota procera</i> Scop. Druid Hill Park..... | Plate 21 |
| <i>Lepiota cepæstipes</i> Sow. Carroll county..... | Plate 23 |
| <i>Lepiota rubrotincta</i> Peck. Carroll county..... | Plate 24 |
| “ “ Carroll county..... | Plate 25 |
| <i>Lepiota cristata</i> A. & S. Carroll county..... | Plate 26 |
| <i>Armillaria mellea</i> Vahl. Common..... | Plate 27 |
| “ “ Plate 28 | |
| “ “ Plate 171 | |
| “ “ Plate 172 | |

“Plate 28 represents a form with smooth pileus, the most common form in Maryland. It abounds at the roots of trees, on old stumps, in the corners of old fences, in fact everywhere where there is old wood. The taste is not so nauseous as some represent it, yet it reveals the fact that deception may lurk under a pleasant title, ‘the honey agaric.’ * * * One taste led me to suspect it was a wolf in sheep’s clothing.”

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| <i>Tricholoma rancidulum</i> n. sp. Druid Hill Park | Plate 29 |
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“Pileus 6 to 8 inches across, dry, sometimes marked with rugose lines, glossy, white with a tinge of ochre at the disk, flesh white, brittle, margin striate, sometimes sinuate, then regular, odor very disagreeable; lamellæ slightly decurrent, at first nearly white, then dingy pinkish or brownish ochre, narrow, brittle, separated from the pileus by a touch, close, forked; stem white or dingy white, brownish at base, curved, stuffed, elastic, nearly equal, smooth; spores .00016 x .0002 inch, white.

“In woods. Gregarious. It grows chiefly in vegetable mold.”

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| <i>Tricholoma cellare</i> Banning Baltimore..... | Plate 30 |
| <i>Tricholoma subdurum</i> n. sp. Druid Hill Park..... | Plate 31 |

“Pileus at first hemispherical, then expanded, white, turning dark in age, margin more or less waved, flesh hard, tough; lamellæ yellow, adnexed, close, forked; stem stout, 2.5 inches high, enlarged at base, attenuated upward, white, solid.

“In woods. October, 1875.”

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| <i>Tricholoma Brownei</i> Banning. Common..... | Plate 32 |
| <i>Tricholoma magnum</i> n. sp. Baltimore..... | Plate 33 |

“Pileus at first hemispherical, then expanded, 6 inches broad, fleshy, smooth, silky, cream color, flesh white, firm; lamellæ adnate, emarginate, not crowded, at first white, turning pale salmon or cream color; stem at first solid, then hollow, short, tapering at the base.”

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| <i>Tricholoma nudum</i> Bull. | Baltimore | Plate 34 |
| <i>Tricholoma edurum</i> n. sp. | " | Plate 35 |

"Pileus at first convex, obtuse, thick, fleshy, undulating, hygrophanous, in age expanded, with a slight central depression, margin at first involute, expanding unequally, sometimes lobed, at first dingy white or alutaceous, deepened in shade at the apex, epidermis thin, easily separable; lamellæ white or cream color, adnexed, not crowded except at the margin, easily separable from the flesh of the pileus; stem white, firm, thickened at base, tapering toward the top, sometimes nearly equal, at first solid, then stuffed; spores nearly globose, white, .00025 to .0003 in. broad.

"Pileus 4 to 5 in. across; stem 3 to 4 in. long.

"Taste mild, odor pleasant but powerful, resembling that of our edible mushroom, *A. campestris*. Gregarious."

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| <i>Tricholoma personatum</i> Fr. | Baltimore | Plate 37 |
| <i>Clitocybe illudens</i> Schw. | Anne Arundel county | Plate 173 |
| " " | Howard county | Plate 38 |
| <i>Clitocybe trullisata</i> Ellis. | Baltimore county | Plate 39 |
| " " | " | Plate 40 |
| <i>Clitocybe infundibuliformis</i> Schæff. | Druid Hill Park ... | Plate 41 |
| <i>Clitocybe amethystina</i> Bolt. | Druid Hill Park | Plate 42 |

"This is the amethystine variety of *Clitocybe laccata*. The spores are the same in size and color, though the pileus differs greatly in appearance."

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| <i>Clitocybe laccata</i> Scop. | Druid Hill Park | Plate 43 |
| " " | Halls Spring | Plate 44 |
| " " | " | Plate 154 |

"Plate 154 shows this plant with a zoned pileus. Rev. J. Stevenson speaks truly when he calls it 'a most provoking agaric.' At first I thought I had in it a new species, but upon close examination I found that *C. laccata* had taken a freak to come out in a decidedly zoned dress. This is the third drawing in this book showing the variations in this plant."

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| <i>Clitocybe odora</i> Bull. | Baltimore | Plate 45 |
| <i>Clitocybe aquatica</i> n. sp. | Druid Hill Park | Plate 46 |

"Pileus at first obtuse, then expanded, pale ochre, often flesh color, depressed in the center, sprinkled with floccose evanescent scales, margin waved and slightly striate; lamellæ narrow, decurrent, not crowded, forked, ochraceous; stem 6 to 7 inches long, densely cæspitose, stuffed, elastic, attenuated at base, enlarged at the apex and striate from the lengthened lamellæ, concolorous; spores .00018x.00032 in., white.

"I have found this plant in various sections of the State and always growing in wet places in woods or by streams; thus I name it *O. aquatica*."

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| <i>Collybia platyphylla</i> Fr, Baltimore | Plate 36 |
| <i>Collybia radicata</i> Relh. Druid Hill Park | Plate 48 |
| <i>Collybia siticulosa</i> n. sp. Baltimore | Plate 47 |

"Pileus fleshy in the center, thin at margin, at first decidedly umbonate, then depressed, margin at first involute, ochraceous; lamellæ free, not distant, dirty white or pale cream color; stem cartilaginous, hollow, twisted, flattened where it unites with the pileus, very pale ochre.

"This fungus is particularly tough and dry, so much so that it is unnecessary to submit it to the usual process for preservation. Hence its name *siticulosa*."

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| <i>Collybia subrigua</i> n. sp. Carroll county | Plate 49 |
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"Pileus convex, then expanded, sometimes broadly umbonate, then centrally depressed, dark brown at disk, ochraceous at the margin, hygrophanous, shining when dry, flesh white, margin thin, split; lamellæ white, narrow, adnate, forked, close, turning dirty white in age; stem stuffed with thready particles, nearly equal, blunt at base, flattened at the apex, twisted, striate where it meets the lamellæ, pallid; spores .0002x.00034 in. white.

"The plant was excessively hygrophanous when first collected, it then became dry and shining."

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| <i>Pleurotus mitis</i> Pers. Druid Hill Park | Plate 50 |
| <i>Pleurotus ostreatus</i> Jacq. Druid Hill Park | Plate 51 |

"The flesh is hard and when eaten it requires much cooking to make it palatable. According to my own taste the 'tree oyster' is much more pleasing to the eye than to the palate. At no time have I ever been able to discover the slightest resemblance to the animal bivalve for which it is named. I have eaten it before and after cooking."

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| <i>Pleurotus spathulatus</i> Pers. Baltimore | Plate 52 |
| <i>Pleurotus euosmus</i> Berk. Druid Hill Park | Plate 53 |

"I am very doubtful whether the plant figured is truly *P. euosmus* Berk. I have never met it since 1878."

The spores of the plant figured are represented as globose, rose colored, .00018 in. broad. The doubt is therefore well founded.

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| <i>Pleurotus sapidus</i> Kalchb. Druid Hill Park | Plate 54 |
| <i>Volvaria bombycina</i> Schæff. Baltimore county | Plate 55 |
| <i>Volvaria parvulus</i> Weinm. Western Maryland | Plate 158 |
| <i>Pluteus cervinus</i> Schæff. Western Maryland | Plate 157 |

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| <i>Clitopilus Orcella Bull.</i> | Baltimore county | Plate 56 |
| <i>Pholiota rubecula n. sp.</i> | Baltimore | Plate 57 |

"Pileus fleshy, dry, smooth, glossy, expanded, in age centrally depressed, subrufescent, margin involute; lamellæ adnate, not distant, reddish-brown; stem solid, equal. At the roots of trees or on the ground. July to November."

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| <i>Pholiota mollicula n. sp.</i> | Druid Hill Park | Plate 170 |
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"Pileus fleshy, smooth, hygrophanous, whitish, deepened into yellow at the disk, flesh moist, even, wet so that the plant withers rapidly; lamellæ close or crowded, emarginate, white, turning cinnamon color in age; stem stuffed, then hollow, pubescent, at length smooth, white, regular; annulus large, white; spores, .0002 x .0003 in. ferruginose, somewhat irregular.

"In woods at roots of trees. The plant is difficult to dry, nearly always rapidly devoured by insect larvæ and falls out of shape from excessive moisture."

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| <i>Pholiota dura Bolt.</i> | Frederick county | Plate 58 |
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| <i>Pholiota præcox Pers.</i> | Frederick county | Plate 59 |
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| <i>Pholiota adiposa Fr.</i> | Carroll county and Baltimore | Plate 60 |
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| <i>Inocybe subroindica n. sp.</i> | Frederick county | Plate 61 |
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"Pileus at first campanulate, obtuse, dry, cracked longitudinally, glossy, fleshy at the disk, thin at margin, flesh white or slightly pinkish; lamellæ adnate, close, forked, lanceolate, cream color, turning brownish ochre; stem nearly regular, twisted, marked with reddish fibrils, stuffed, hard, brittle.

"In open places in woods. August and September."

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| <i>Inocybe lanuginosa Fr.</i> | Druid Hill Park | Plate 63 |
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"For five years this plant appeared regularly in July and August under a group of cedar trees."

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| <i>Naucoria semiorbicularis Bull.</i> | Baltimore | Plate 64 |
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| <i>Crepidotus mollis Schæff.</i> | Eastern Maryland | Plate 65 |
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| <i>Agaricus campestris L.</i> | Druid Hill Park | Plate 66 |
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| <i>Agaricus comptulus Fr.</i> | Eastern and Western Maryland | Plate 67 |
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| <i>Agaricus silvaticus Schæff.</i> | Druid Hill Park | Plate 68 |
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| <i>Hypholoma appendiculatum Bull.</i> | Frederick county | Plate 69 |
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| <i>Hypholoma Candolleianum Fr.</i> | Frederick county | Plate 72 |
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| <i>Hypholoma subaquilum n. sp.</i> | Druid Hill Park | Plate 155 |
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"Pileus brown, convex, smooth, hygrophanous, often shaded into ochre at margin, veil delicate, silk-like, encircling and covering the marginal extremities of the lamellæ but forming no ring on the stem, flesh white, turning umber when cut; lamellæ adnexed or nearly free, close, forked, umber; stems caespitose, regular, hollow, silky, white, two to three inches long; spores brown, .00016 x .0002 inch."

Hypholoma perplexum Pk. Baltimore Plate 70

This is probably a mere variety of *H. sublateritium* Schæff.

Hypholoma fasciculare *Huds.* Baltimore..... Plate 71

Coprinus virgineus *n. sp.* Maryland..... Plate 160

“Pileus ovate, campanulate or cylindrical, pale ochre, the margin thin, torn, floccose; lamellæ narrow, close, forked, at first white, turning dark but never black, adnexed; stem three and a half inches long, stout, somewhat stuffed, attenuated where it meets the pileus, flattened, floccose; spores black.

“Caespitose or gregarious at the roots of trees or about old stumps. Also found in Virginia.

"The plant is not rapidly deliquescent, remaining perfect for some hours."

Coprinus atramentarius Bull. Druid Hill Park Plate 71

Coprinus comatus Fr. Baltimore Plate 74

Coprinus micaceus Fr. Baltimore county..... Plate 75

Coprinus plicatilis Fr. Western Maryland..... Plate 161

Paxillus panuoides Fr. Maryland..... Plate 76

..... Plate 77

"The two plants figured are the same in character though they differ in color and shape. Both were found on barrel hoops in the same cellar."

Hygrophorus chlorophanus Fr. Baltimore Plate 78

Lactarius alpinus Pk. Western Maryland Plate 79

Lactarius uvidus Fr. Eastern and Western Maryland... Plate 80

Lactarius insulsus Fr. " " " " Plate 81

Lactarius Indigo Schw. Baltimore county..... Plate 82

Lactarius piperatus Fr. Common Plate 83

Lactarius volemus Fr. Baltimore Plate 84

“.....” Plate 85

“This plant was plentiful in July, 1877, and uniformly slender, as represented in plate 84. In 1878 it was also plentiful but large, as shown in plate 85. * * This plant is edible and makes an agreeable dish in the culinary department. I tried it stewed in beef gravy which it greatly improved in flavor. When eaten raw it is pleasant to the taste. Both the flesh and the milk turn brown upon exposure to the air.”

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| <i>Lactarius pyrogalus</i> Fr. Howard and Carroll counties .. | Plate 86 |
| <i>Russula atropurpurea</i> Pk. Eastern and Western Maryland | Plate 87 |
| <i>Russula foetens</i> Fr. Eastern and Western Maryland.... | Plate 88 |
| <i>Russula viridipes</i> n. sp. Baltimore..... | Plate 89 |

"Pileus dull verdigris green somewhat mottled with a darker shade, flesh brittle, white, unchanging, taste extremely acrid, margin inflexed; lamellæ meet the stem, dingy ochre or pale buff, narrow, forked, the short ones apparently anastomosing; stem hollow, 1 to 2 inches high, tapering at base, enlarged at the apex, smooth, a brighter green than the pileus; spores .00032 in.

"This fungus has very little moisture though gathered after a heavy rain. At first I thought it was *Lactarius viridis* Fr., but there was no milk. Have not met with it since."

The figure has the appearance of *Lactarius atroviridis* Pk.

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| <i>Russula emetica</i> Fr. Baltimore | Plate 90 |
| <i>Russula virescens</i> Fr. " | Plate 91 |

"Very variable in color as well as in size. Sometimes it is green as represented in the figure, then greenish ochre, or yellowish white tinged with green. It is very easy to dry except in wet weather, and even then when kept in a warm dry room."

The plant figured is a variety having a thin striate acute margin.

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| <i>Russula alutacea</i> Fr. Baltimore | Plate 92 |
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"Taste mild and agreeable. * * I have good reason for placing our American plant among the edible species, for I ate a portion without ill effect."

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| <i>Russula rubra</i> Fr. Baltimore | Plate 93 |
| <i>Russula lepida</i> Fr. Anne Arundel county..... | Plate 94 |
| <i>Russula variata</i> Banning. Baltimore..... | Plate 95 |
| <i>Russula cinnamomea</i> Banning. Baltimore..... | Plate 96 |
| <i>Cantharellus floccosus</i> Schw. Carroll county | Plate 97 |
| <i>Cantharellus cibarius</i> Fr. Druid Hill Park | Plate 98 |
| <i>Cantharellus cinnabarinus</i> Schw. Druid Hill Park..... | Plate 99 |
| <i>Marasmius rotula</i> Fr. Carroll county..... | Plate 100 |
| <i>Marasmius oreades</i> Fr. Frederick county | Plate 101 |
| <i>Lentinus lepideus</i> Fr. Druid Hill Park | Plate 102 |

The figure represents a form with branching stem.

| | |
|--|-----------|
| <i>Lentinus strigosus</i> Schw. Knoxville..... | Plate 162 |
| <i>Lenzites Cookei</i> Berk. Maryland..... | Plate 163 |
| <i>Panus strigosus</i> B. & C. Eastern Maryland..... | Plate 103 |

| | | |
|-------------------------------------|-----------------------|-----------|
| <i>Boletus ornatipes</i> <i>Pk.</i> | Baltimore..... | Plate 104 |
| <i>Boletus Peckii</i> <i>Frost.</i> | Baltimore county..... | Plate 106 |
| “ “ | Druid Hill Park..... | Plate 113 |
| <i>Boletus felleus</i> <i>Bull.</i> | Baltimore..... | Plate 107 |

“In 1886 I found this fungus in Virginia measuring 18 inches across the pileus.”

| | | |
|--|----------------------|-----------|
| <i>Boletus ignoratus</i> , <i>n. sp.</i> | Druid Hill Park..... | Plate 108 |
|--|----------------------|-----------|

“Pileus convex, viscid, bright lemon color, marked with rugose lines of orange color, which are distributed over the pileus giving it a streaked appearance, flesh white, solid, does not change color when cut or broken, taste slightly acid; pores lemon color, moderately large, free, connected with the stem by web-like filaments; stem larger at the apex, somewhat tapering toward the base, yellow, smooth, solid; spores .00018x.00044 in.”

This closely approaches *Boletus unicolor* Frost, from which it scarcely differs except in its white flesh and free tubes.

| | | |
|-----------------------------------|-----------------------------------|-----------|
| <i>Boletus affinis</i> <i>Pk.</i> | Eastern and Western Maryland..... | Plate 109 |
| <i>Boletus eximius</i> <i>Pk.</i> | Druid Hill Park..... | Plate 110 |

This is *Boletus robustus* Frost, of which the name is preoccupied.

| | | |
|--|----------------------|-----------|
| <i>Boletus luridus</i> <i>Fr.</i> | Druid Hill Park..... | Plate 111 |
| “ “ | Howard county..... | Plate 112 |
| <i>Boletus Russellii</i> <i>Frost.</i> | Baltimore..... | Plate 114 |

“One of the plants, as shown in the figure, had *Polyporus splendens* and what I took to be *Nyctalis asterophora* growing upon the pileus.”

It is certainly remarkable to find two species of fungi growing upon one pileus, and that too before the pileus was much decayed.

| | | |
|--|-----------------------------------|-----------|
| <i>Boletus subtomentosus</i> <i>L.</i> | Eastern and Western Maryland..... | Plate 115 |
| <i>Boletus modestus</i> <i>Pk.</i> | Eastern Maryland..... | Plate 116 |

“The plant figured is a monstrosity, which seemed undecided whether to remain a *Boletus* or to become an *Agaric*. Its hymenium was decidedly lamellated on one side nearly to the margin; all other sides were lamellated only as the tubes neared the reticulated stem.”

| | | |
|--|----------------------|-----------|
| <i>Strobilomyces strobilaceus</i> <i>Berk.</i> | Baltimore county.... | Plate 105 |
|--|----------------------|-----------|

This is *Boletus strobilaceus* Scop.

| | | |
|---|----------------------|-----------|
| <i>Polyporus Beattiei</i> <i>Banning.</i> | Druid Hill Park..... | Plate 118 |
| <i>Polyporus tomentosus</i> <i>Fr.</i> | Baltimore..... | Plate 119 |

| | | |
|--|------------------------|-----------|
| <i>Polyporus splendens</i> <i>Pk.</i> | Druid Hill Park..... | Plate 120 |
| <i>Polyporus applanatus</i> <i>Fr.</i> | Baltimore... .. | Plate 121 |
| <i>Polyporus cinnabarinus</i> <i>Jacq.</i> | Baltimore county..... | Plate 122 |
| <i>Polyporus parvulus</i> <i>Klotsch.</i> | Baltimore.. .. | Plate 123 |
| <i>Polyporus rimosus</i> <i>Berk.</i> | Western Maryland | Plate 124 |

"Found on Acacia trees. It is valuable for retaining fire, and is much used by the colored people. One specimen will last a whole night to build fires and light their pipes."

| | | |
|--|-----------------------|-----------|
| <i>Polyporus sulphureus</i> <i>Fr.</i> | Baltimore county..... | Plate 125 |
| <i>Polyporus versicolor</i> <i>Fr.</i> | Common..... | Plate 126 |
| <i>Polyporus pergamenus</i> <i>Fr.</i> | Common..... | Plate 127 |
| <i>Polyporus nidulans</i> <i>Fr.</i> | Druid Hill Park | Plate 128 |
| <i>Polyporus poripes</i> <i>Fr.</i> | Halls Spring | Plate 129 |
| <i>Polyporus Curtisii</i> <i>Berk.</i> | Druid Hill Park | Plate 130 |
| <i>Polyporus lactifluus</i> <i>Pk.</i> | Druid Hill Park | Plate 131 |

"The flesh when cut exuded a white milk profusely."

| | | |
|--------------------------------------|--------------------|-----------|
| <i>Merulius lachrymans.</i> | Maryland | Plate 132 |
| <i>Fistulina hepatica</i> <i>Fr.</i> | Halls Spring | Plate 133 |
| <i>Hydnum rufescens</i> <i>Pers.</i> | Lutherville | Plate 134 |

"It is found most plentiful in pine and oak woods, solitary or gregarious, often inclined to grow in circles."

| | | |
|--|---------------------|-----------|
| <i>Hydnum repandum</i> <i>L.</i> | Baltimore..... | Plate 135 |
| <i>Hydnum imbricatum</i> <i>L.</i> | Halls Spring..... | Plate 136 |
| <i>Hydnum cæspitosum</i> <i>n. sp.</i> | Carroll county..... | Plate 137 |

"Pileus yellow or very pale ochre, dry, eccentric; aculei short, decurrent, very pale ochre; stem solid, cream color; flesh turns yellow when cut.

"It grows in clusters at the roots of trees and near old stumps."

| | | |
|---|------------------------|-----------|
| <i>Irpex lacteus</i> <i>Fr.</i> | Maryland | Plate 164 |
| <i>Craterellus pistillaris</i> <i>Schæff.</i> | Druid Hill Park | Plate 138 |
| <i>Craterellus cornucopioides</i> <i>Fr.</i> | Druid Hill Park..... | Plate 139 |
| <i>Corynites Ravenlii</i> <i>B. & C.</i> | Baltimore county | Plate 140 |

"This plant is now placed in the genus *Mutinus*."

| | | |
|--|------------------------|-----------|
| <i>Phallus Dæmonum</i> <i>Rumph.</i> | Druid Hill Park..... | Plate 141 |
| <i>Phallus impudicus</i> <i>L.</i> | Druid Hill Park..... | Plate 142 |
| <i>Geaster fimbriatus.</i> | Baltimore | Plate 143 |
| <i>Geaster saccatus</i> <i>Fr.</i> | Frederick county | Plate 166 |
| <i>Geaster striatus</i> <i>DC.</i> | | |
| <i>Geaster triplex</i> <i>Jungh.</i> | | |
| <i>Lycoperdon cyathiforme</i> <i>Bosc.</i> | Maryland | Plate 144 |

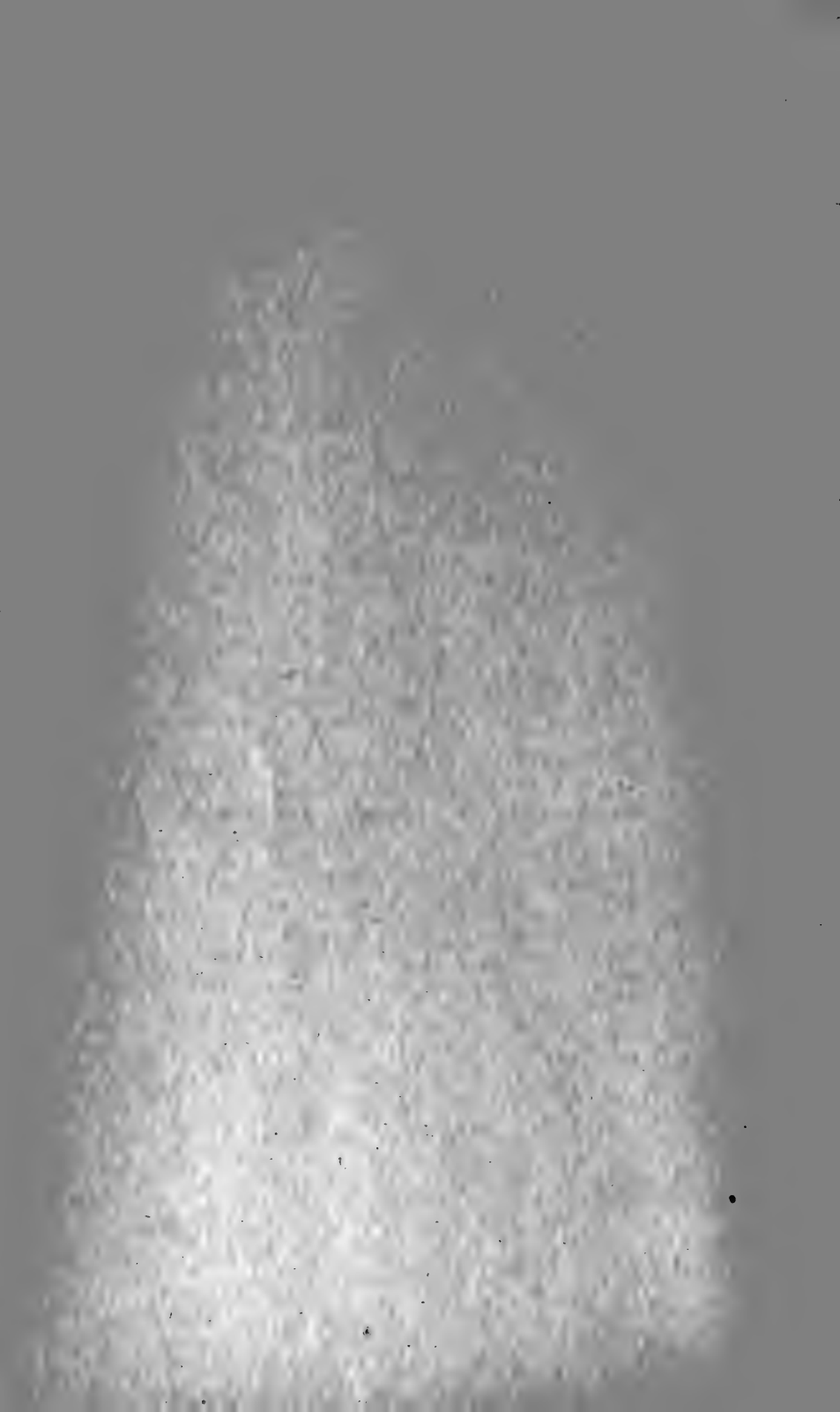
| | |
|---|-----------|
| <i>Lycoperdon gemmatum</i> Batsch. Baltimore..... | Plate 145 |
| <i>Lycoperdon pyriforme</i> Schæff. Common.... | Plate 147 |
| <i>Lycoperdon giganteum</i> Batsch. Common..... | Plate 167 |
| <i>Lycoperdon Frostii</i> Pk. Carroll county..... | Plate 148 |
| <i>Scleroderma vulgare</i> Fr. Blue Ridge Mountains | Plate 146 |
| <i>Cyathus vernicosus</i> DC. Lutherville | Plate 149 |
| <i>Crucibulum vulgare</i> Tul. Common..... | Plate 150 |
| <i>Hypomyces Banningii</i> Pk. Baltimore | Plate 151 |
| <i>Hypomyces lactifluorum</i> Schw. Lutherville.... | Plate 152 |
| <i>Xylaria polymorpha</i> Grev. Druid Hill Park | Plate 153 |
| <i>Hirneola auricula-Judæ</i> Berk. Common..... | Plate 165 |
| <i>Morchella esculenta</i> Pers. Western Maryland..... | Plate 168 |
| <i>Helvella crispa</i> Fr. Druid Hill Park | Plate 169 |

Plates 62, 87 and 117 represent species unnamed or unidentified.

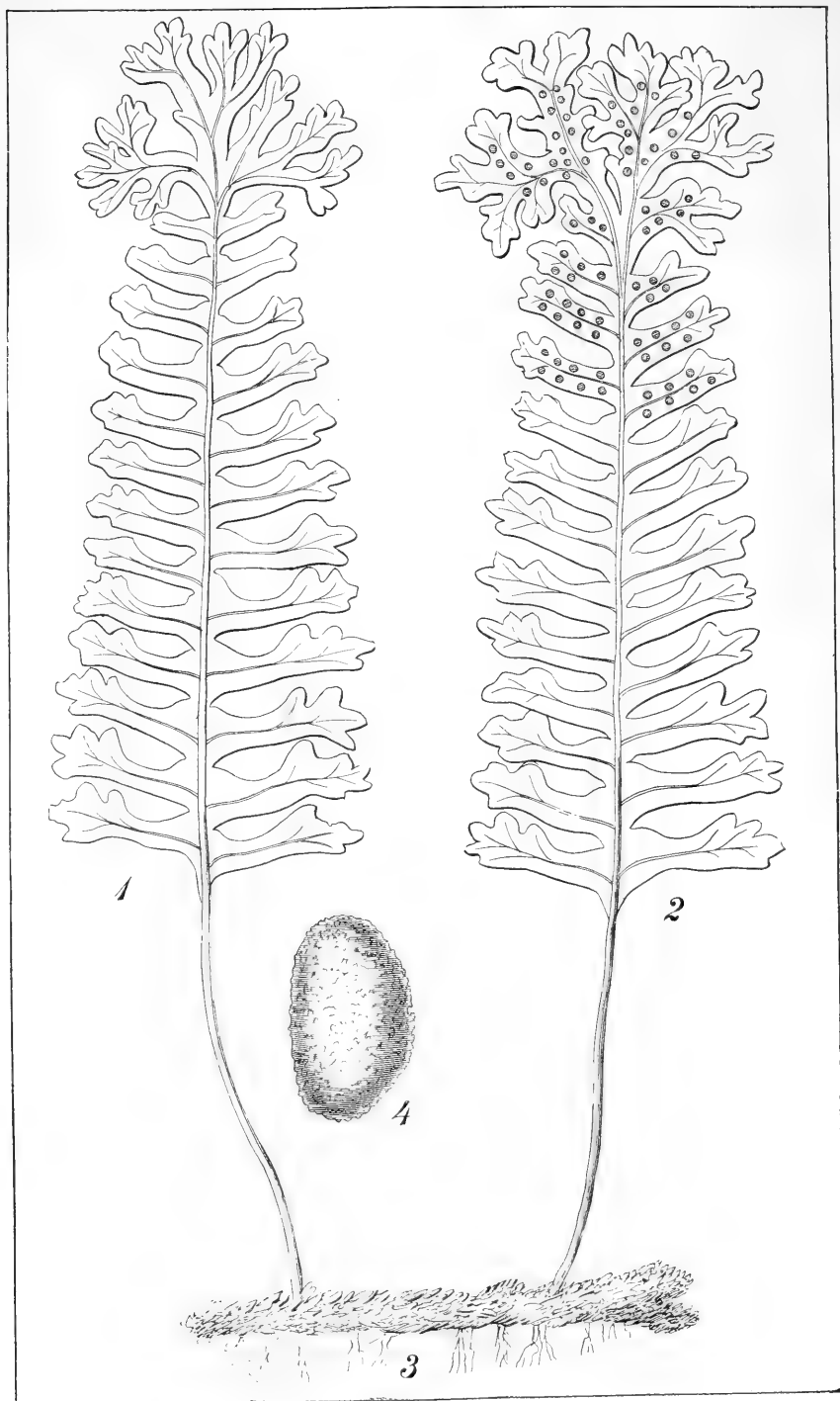
Plate 175 represents *Boletus Morgani* Pk., which has not yet been found in Maryland.

The species found in Maryland by Miss Banning but not included in the Volume of Illustrations are 28. Their names are as follows:

| | |
|------------------------------------|--|
| <i>Lepiota gracilentia</i> Krombh. | <i>Omphalia grisea</i> Fr. |
| <i>Lepiota mastoidea</i> Fr. | <i>Pluteus chrysophæus</i> Schæff. |
| <i>Armillaria mucida</i> Fr. | <i>Entoloma placentum</i> Batsch. |
| <i>Tricholoma carneum</i> Bull. | <i>Clitopilus prunulus</i> Scop. |
| <i>Clitocybe flaccida</i> Sow. | <i>Naucoria melinoides</i> Fr. |
| <i>Clitocybe dealbata</i> Fr. | <i>Stropharia semiglobatus</i> Batsch. |
| <i>Clitocybe metachroa</i> Fr. | <i>Panæolus separatus</i> L. |
| <i>Pleurotus ulmarius</i> Bull. | <i>Coprinus domesticus</i> Fr. |
| <i>Pleurotus algidus</i> Fr. | <i>Coprinus Hendersonii</i> Fr. |



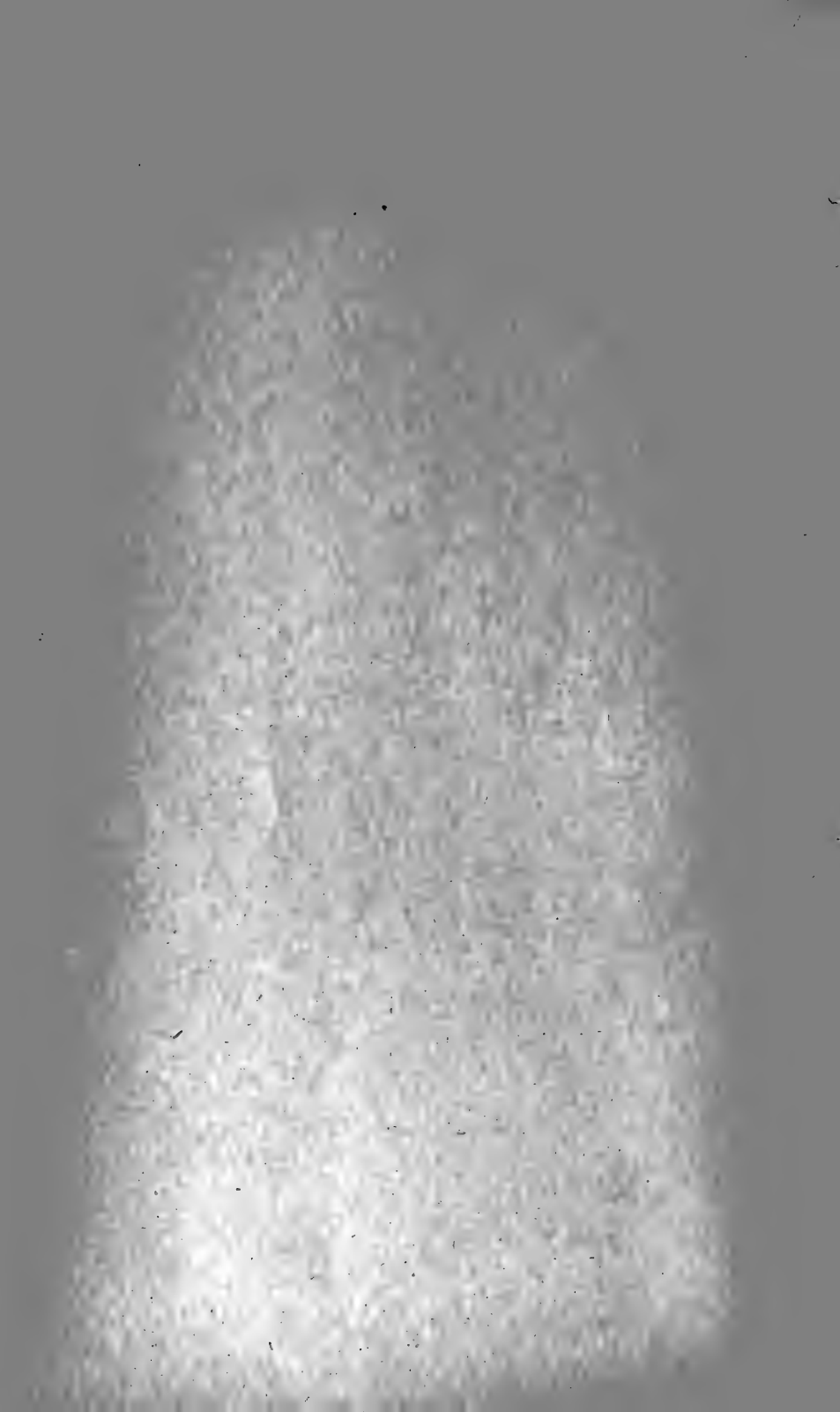




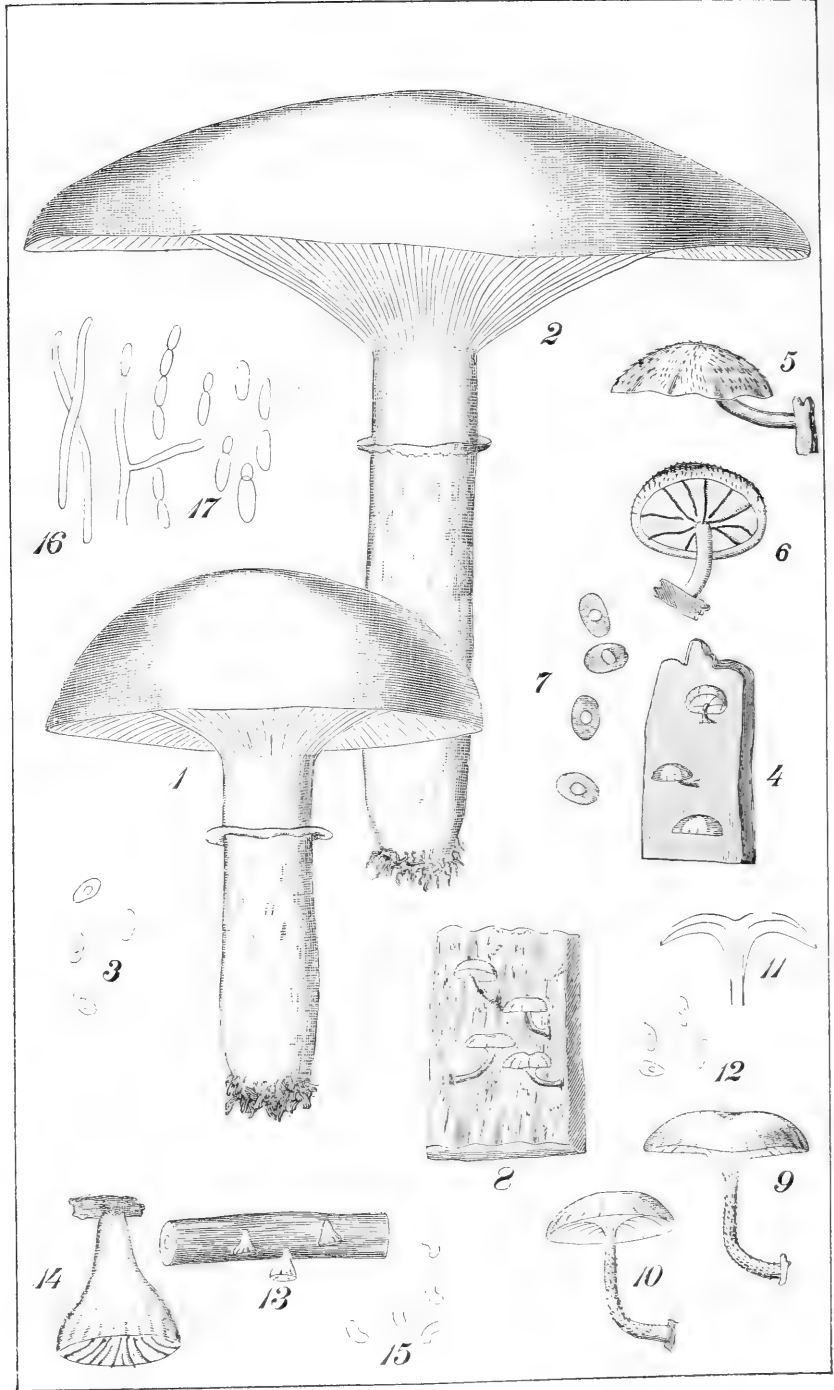
EXPLANATION OF PLATE 1

POLYPODIUM VULGARE *L.* VAR. CRISTATUM *Lowe.*

- Fig. 1. A frond showing the upper surface.
- Fig. 2. A frond showing the lower surface with its fruit dots.
- Fig. 3. The creeping rootstock.
- Fig. 4. A spore x 400.







EXPLANATION OF PLATE 2

ARMILLARIA VISCIDIPES Peck.

- Fig. 1. An immature plant.
- Fig. 2. A mature plant.
- Fig. 3. Four spores $\times 400$.

CREPIDOTUS DISTANS Peck.

- Fig. 4. Piece of bark bearing three plants.
- Fig. 5. A plant enlarged, showing the upper surface of the pileus.
- Fig. 6. A plant enlarged, showing the lamellæ.
- Fig. 7. Four spores $\times 400$.

OMPHALIA CORTICOLA Peck.

- Fig. 8. A piece of bark bearing four plants.
- Fig. 9. A plant enlarged, showing the umbilicus of the pileus.
- Fig. 10. A plant enlarged, showing the lamellæ.
- Fig. 11. Vertical section of a pileus and the upper part of the stem.
- Fig. 12. Four spores $\times 400$.

PLEUROTUS CAMPANULATUS Peck.

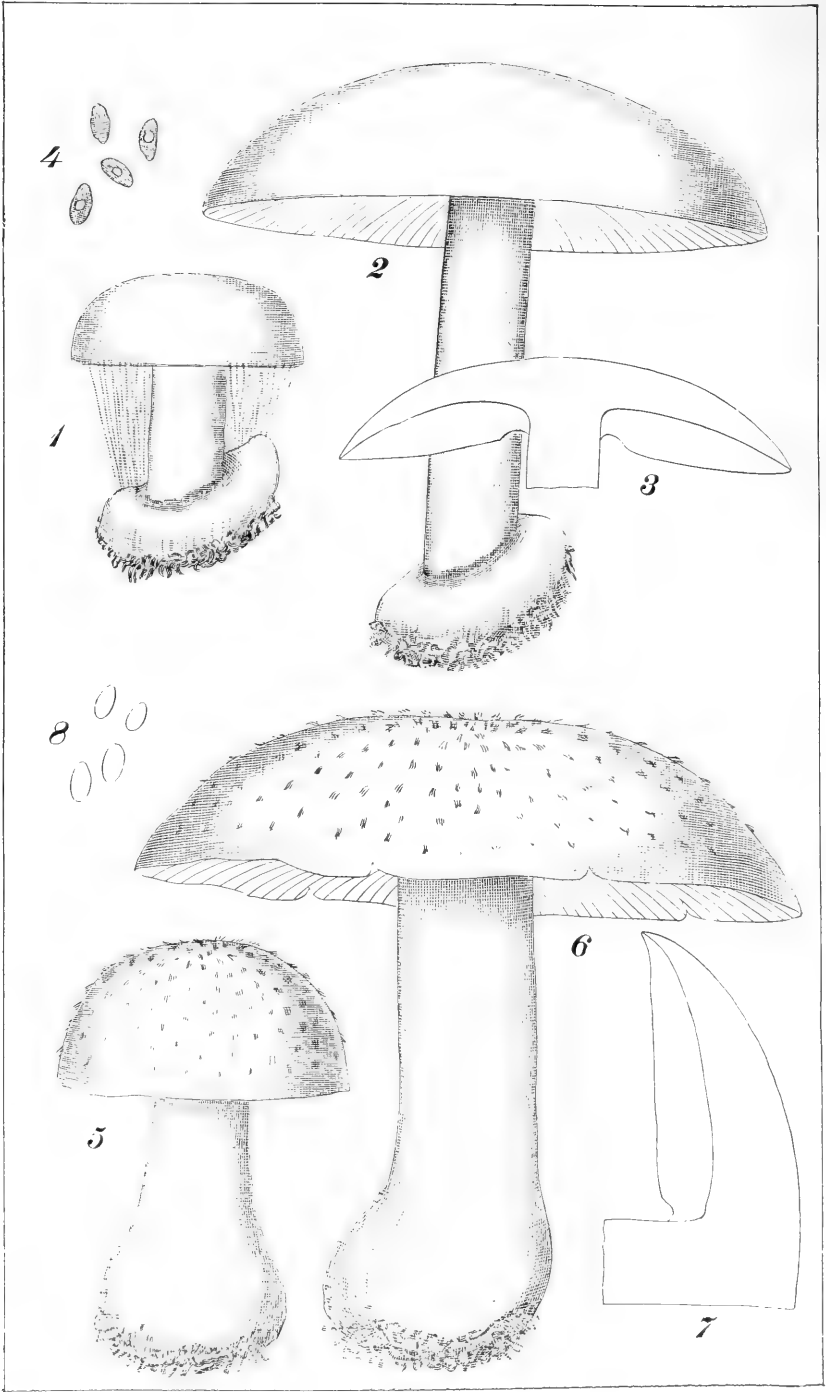
- Fig. 13. A branch bearing three plants.
- Fig. 14. A plant enlarged.
- Fig. 15. Five spores $\times 400$.

SACCHAROMYCES BETULE Pl. & Pat.

- Fig. 16. Three hyphæ, one of them branched.
- Fig. 17. Several spores $\times 400$.







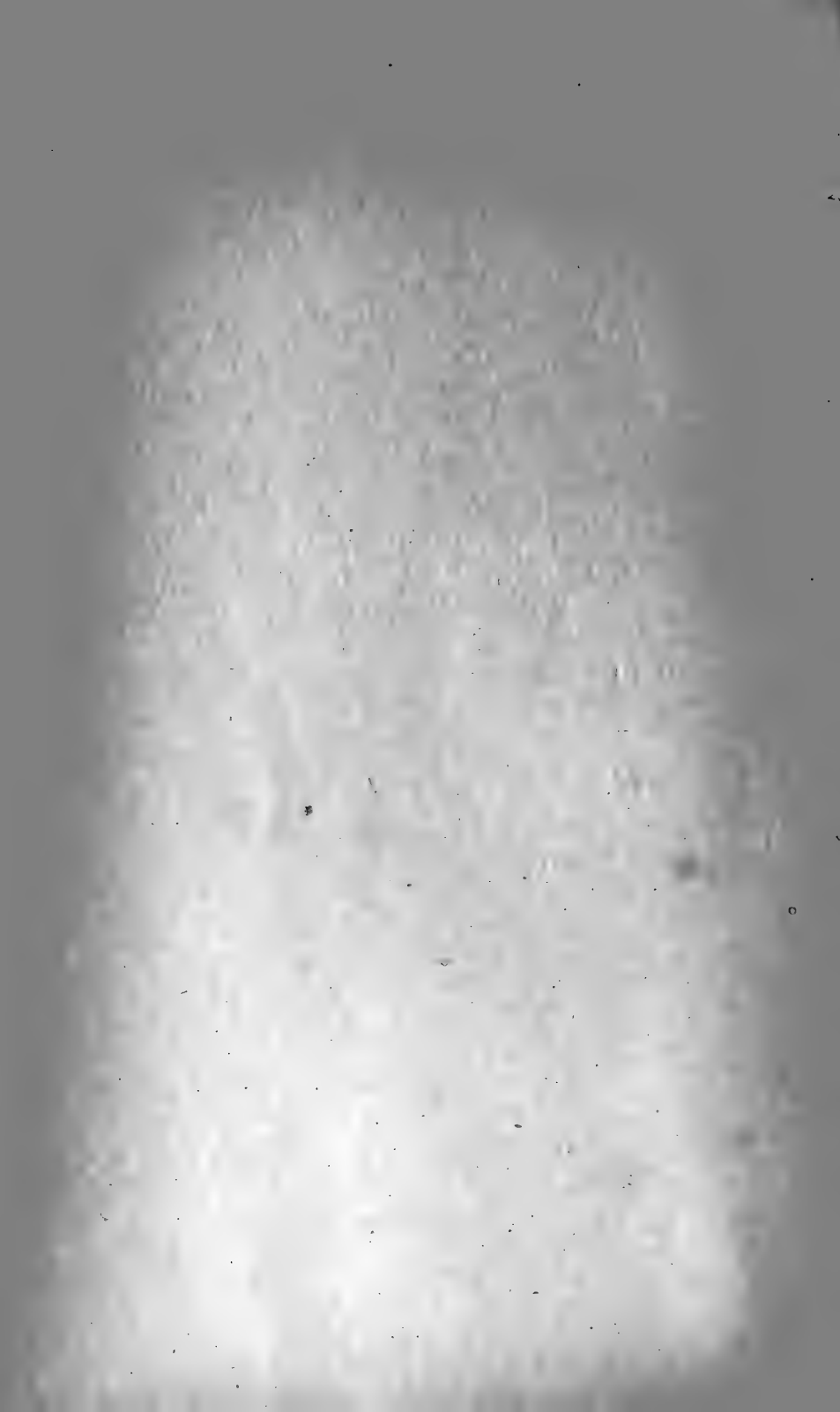
EXPLANATION OF PLATE 3

CORTINARIUS ALBIDUS Peck.

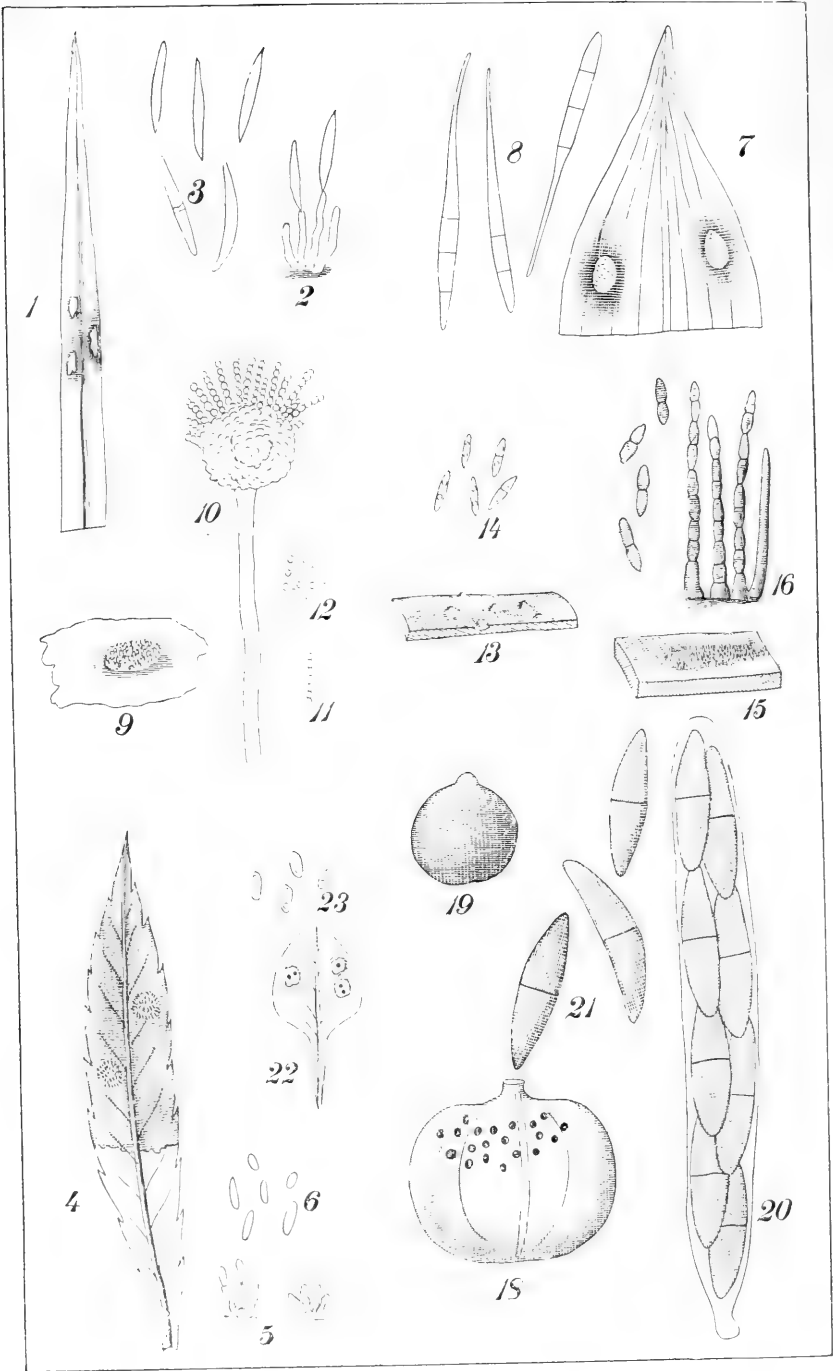
- Fig. 1. An immature plant.
- Fig. 2. A mature plant.
- Fig. 3. Vertical section of a pileus and the upper part of the stem.
- Fig. 4. Four spores x 400.

TRICHOLOMA GRANDE Peck.

- Fig. 5. An immature plant.
- Fig. 6. A mature plant.
- Fig. 7. Half of a vertical section of a pileus and upper part of the stem;
these three figures about two-thirds natural size.
- Fig. 8. Four spores x 400.







EXPLANATION OF PLATE 4

RAMULARIA GRAMINICOLA Peck.

- Fig. 1. Upper part of a grass leaf marked with three fungous spots.
Fig. 2. A cluster of four hyphæ, two of them bearing spores, x 400.
Fig. 3. Five spores x 400.

RAMULARIA DESTRUENS Peck.

- Fig. 4. A leaflet with the upper half blackened by the fungus and showing two fungous spots.
Fig. 5. Tufts of hyphæ, two filaments bearing spores, x 400.
Fig. 6. Six spores x 400.

CERCOSPORELLA VERATRI Peck.

- Fig. 7. Upper part of a leaf with two fungous spots.
Fig. 8. Three spores x 400.

ASPERGILLUS AVIARIUS Peck.

- Fig. 9. Piece of membrane bearing a patch of the fungus.
Fig. 10. A spore-bearing vesicle and its filament, the former partly denuded of its chains of spores, x 400.
Fig. 11. A single chain of spores x 400.
Fig. 12. A group of free spores x 400.

SEPTOMYXA CARPINI Peck.

- Fig. 13. A piece of bark bearing six heaps of spores.
Fig. 14. Five spores x 400.

BISPORA EFFUSA Peck.

- Fig. 15. Piece of wood bearing a patch of the fungus.
Fig. 16. Three chains of spores and a sterile hypha x 400.
Fig. 17. Four free spores x 400.

CARYOSPORA MINOR Peck.

- Fig. 18. A hickory nut bearing a group of the perithecia.
Fig. 19. A perithecium enlarged.
Fig. 20. An ascus containing spores x 400.
Fig. 21. Three spores x 400.

PHYLLOSTICTA LUDWIGIÆ Peck.

- Fig. 22. A leaf showing three fungous spots.
Fig. 23. Four spores x 400.

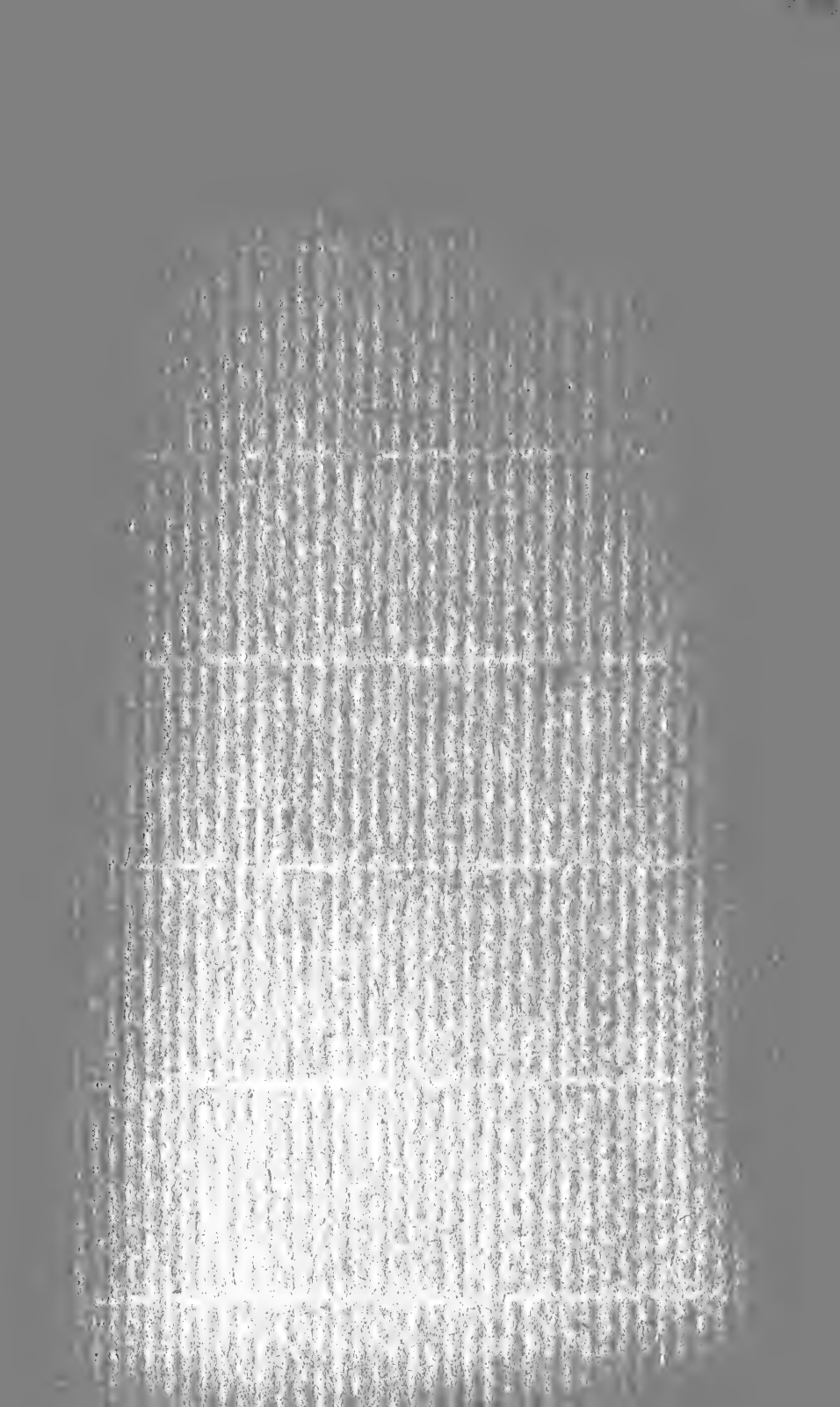
[FROM THE 45th REPORT OF THE NEW YORK STATE MUSEUM OF NATURAL HISTORY.]

ANNUAL REPORT
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OF THE
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Made to the Regents of the University, Pursuant to
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BY CHARLES H. PECK.

ALBANY:
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1893.

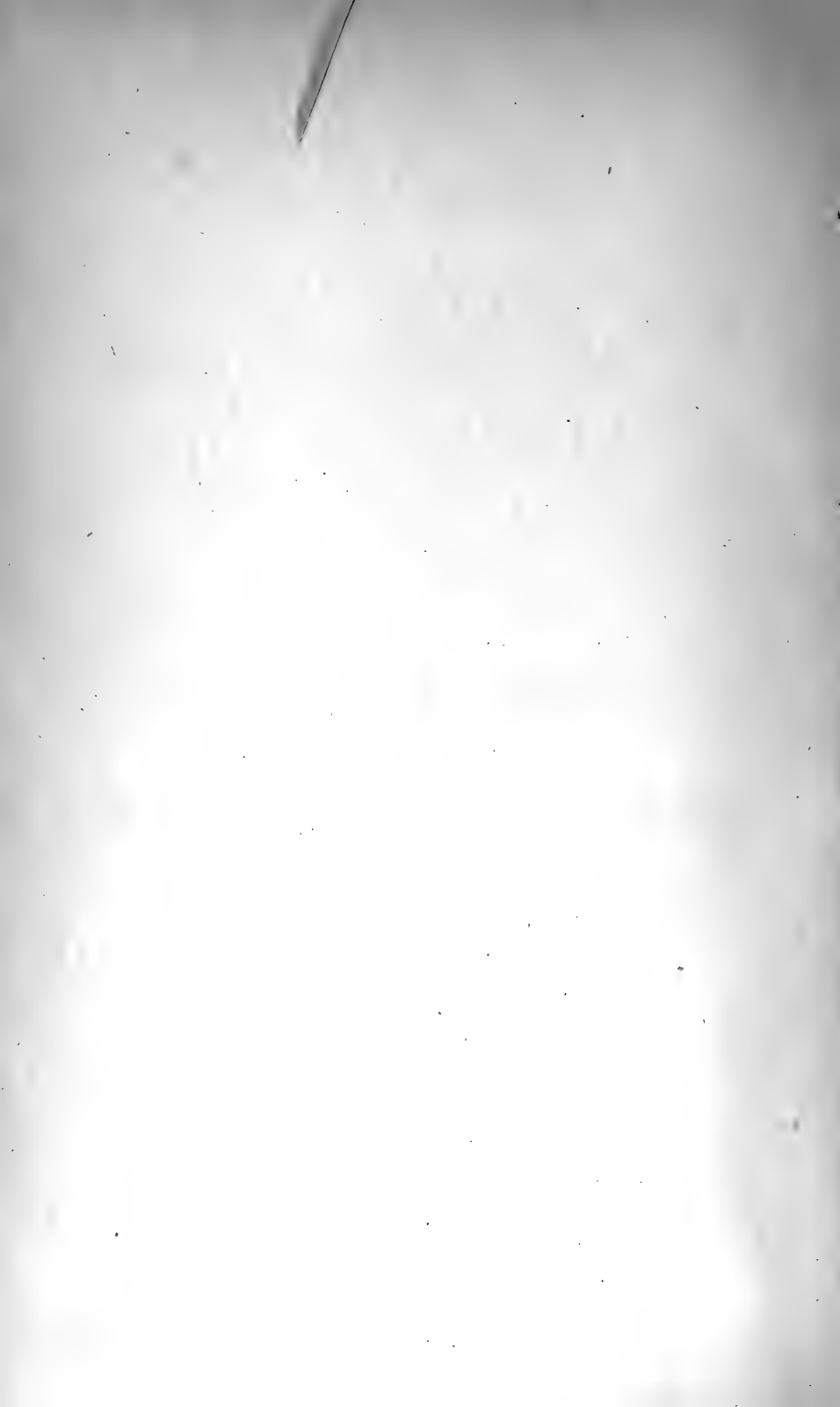


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STATE OF NEW YORK.

No. 66.

IN SENATE,

JANUARY, 1892.

ANNUAL REPORT

OF THE

STATE BOTANIST.

OFFICE OF THE STATE BOTANIST, {

ALBANY, *January*, 1892. }

*To the Honorable the Regents of the University of the State of
New York:*

I have the honor to present to you my annual report for
the year 1891.

Very respectfully.

CHARLES H. PECK.



R E P O R T .

To the Honorable the Regents of the University of the State of New York:

GENTLEMEN.—I have the honor of communicating to you the following report:

Specimens of plants for the State Herbarium have been collected in the counties of Albany, Cattaraugus, Cayuga, Cortland, Essex, Fulton, Hamilton, Rensselaer, Saratoga, Seneca, Tompkins, Ulster and Wayne.

Specimens have been contributed by correspondents who collected them in the counties of Albany, Orleans, Onondaga, Rensselaer, Richmond, St. Lawrence, Sullivan, Tompkins and Wayne.

Specimens representing 165 species have been added to the Herbarium during the past year, of which 154 were collected by the Botanist and 11 were contributed. Of the former number 29 were not before represented in the Herbarium, and six of these are new or undescribed species. Of the 11 contributed species, five were not before represented. The increase in the number of species represented is 34. The remaining specimens show some variety or form which was lacking in the Herbarium or serve to improve or make more complete the representation of their respective species.

A list of the species of which specimens have been added to the Herbarium is marked A. Appended to this list are the names of 37 species of trees of which specimens have been collected. These are intended to accompany the collection of wood sections taken from the trunks.

Specimens have been contributed by 23 persons. Among the contributed specimens are many extra-limital species not included in the foregoing enumeration.

Among the contributions is a volume of dried specimens of Carices which is of much interest. It was kindly presented to the State Museum by Mrs. Gould of Hudson and contains examples of about 150 species. It bears the inscription "Carices

Americæ Septentrionalis Exsiccataë. Edidit H. P. Sartwell M. D., Pars I. II. Penn Yan, Nov. Ebor. 1848. 50." Many of the specimens were collected in New York by Dr. Sartwell himself, but there are contributions from such eminent botanists (most of whom, alas! are now dead) as Dewey, Tuckerman, Oakes, Gray, Wood, Chapman, Carey, Olney, Crawe, Sullivant, Mead, Vasey, Kneiskern, Curtis, Cooley and Hale. There are specimens from Massachusetts, Rhode Island, New Jersey, North and South Carolina, Florida, Louisiana, Ohio, Illineis, Michigan and the White Mountains of New Hampshire. Some of the species represented are quite rare and the printed labels show us how all of them were understood by these master minds in those early days of American caricography.

Another contribution worthy of special notice is that of Professor Eaton of New Haven. It is a collection of ferns made in the Island of Trinidad by Mr. Augustus Fendler and commonly known as "Fendler's Ferns of Trinidad." The luxuriant and beautiful ferns of tropical regions are always full of interest to students of this branch of botany, and these will greatly aid those who may wish to study the ferns of our conservatories. A list of contributors and their respective contributions is marked B.

A record of species not before reported by me and descriptions of such as are thought to be new will be found in a part of the report marked C.

I have added to this the descriptions of seven extra-limital species that were sent to me for identification but of which no description was found.

Remarks concerning species previously reported, a record of new localities of rare plants and descriptions of new varieties may be found in a part of the report marked D.

Following a plan previously adopted, the descriptions of our New York species of *Omphalia* have been revised and rewritten and the spores examined and their dimensions included so that the identification of our species may be made more easy, certain and satisfactory. These descriptions may be found in a part of the report marked E.

In accordance with my instructions the work of preparing life-size drawings of our edible and poisonous species of fleshy fungi, colored according to nature, has been commenced. At

the present time twenty plates have been completed and five others are partly done. About forty plates will be needed to illustrate the species satisfactorily. Except in case of some of the smaller species, an entire plate is devoted to a single species, so that its variations in size and color may be shown. The plates are 9 x 12, or $7\frac{1}{2}$ x $9\frac{1}{2}$ within the marginal lines. It has been my purpose to make a personal trial of all the edible species illustrated so that it may be possible for me to speak with confidence concerning their qualities. With two or three exceptions this has been done with the species already figured, and these exceptions will be tried as soon as opportunity is afforded. From the eagerness with which literature pertaining to and illustrations of edible and poisonous fungi are sought and from the numerous inquiries received by me concerning the edible qualities of specimens sent in for identification it is clearly manifest that there is a widespread and increasing desire among our people to understand more of this subject and to be able to distinguish with confidence the good species. I am sure therefore that any well-directed and faithful efforts to meet this demand and to give reliable information on this subject will be well received and highly appreciated.

Some observations of no little interest have been made upon some of the parasitic fungi. A minute grayish mold-like fungus, known to mycologists as *Botrytis vulgaris* is quite common. It is classed among the saprophytes, and its habitat is given as "decaying herbs, fruits, flowers, twigs and leaves." My observations lead to the conclusion that it often acts as a true parasite. It is common enough on the fruit of strawberry, raspberry and blackberry plants. It spreads rapidly in favorable weather from the affected to the sound fruit. If a sound berry is in contact with one affected by this fungus a discolored decaying spot soon appears at the point of contact, showing clearly that the mycelium of the fungus has passed from the diseased berry to the sound one and penetrated its tissues. In this way the contagion will quickly extend through all the berries of the cluster, provided they touch each other and the diseased ones are allowed to remain in place. The fungus quickly produces rot or decay in the berry it attacks but it has no hesitation in attacking perfectly sound and healthy fruit.

The "fruit oidium," *Monilia fructigena*, which has recently been called the "peach rot," is similar to the preceding one in color but very different in structure. It also was regarded by the earlier botanists as a saprophyte, but it also is now known to be a real and a very destructive parasite. The habitat usually ascribed to it in the books is "decaying fruits," but Professors Arthur and Smith have both shown most conclusively that it attacks sound and healthy fruits and that it induces that decay in them which was formerly thought to be a condition of its growth. My observations confirm what they have said of this fungus and show very clearly some of the contributing causes to its ravages. It is well known that its behavior is especially malignant in wet weather and that it works with most destructive force on peaches, plums and cherries, though frequently attacking also, apples, pears and quinces. The past season, cherries with us almost entirely escaped for the simple reason that dry weather prevailed up to the time of their ripening. Plums and peaches on my grounds were fully one-half destroyed by this fungus, but at the time they were maturing wet, cloudy and rainy weather prevailed. One plum tree maturing its fruit later than the others had many diseased fruits while the wet weather lasted, but the trouble was greatly diminished after the rains ceased. Then even the fruit that had cracked open escaped attack.

Insects that eat holes in the fruit are a contributing cause. The only quince on my grounds that I have thus far seen affected was one in the side of which some insect had eaten a small hole and then left it. The aperture was very shallow, but the fungus spores gained admission to the flesh by it and immediately produced the characteristic decayed brown spot all about it as a center of infection. Very many of the affected peaches first showed the presence of the fungus on the side where small holes had been made through the peel, apparently by some small insect, though I was not able to detect any insect in the act. Honey bees in great numbers were found sucking the juice of the peach from these little cavities, and not a few striped cucumber beetles were found in them feeding upon the juicy flesh of the peach. Whenever peaches as well as plums were in contact, an affected one would quickly transmit its disease to its sound neighbor

through the point of contact, which is a strong argument for the proper thinning of fruit. Peaches sometimes transmit the disease, through the agency of the mycelium of the fungus, to the branch that sustains them, and then the branch soon withers and dies. This may be prevented by promptly removing the affected peaches. But sometimes young and tender branches are killed by an attack through the agency of the spores. On a young plum tree the tips of several branches on which there were no plums died and showed the characteristic spore clusters of this fungus on their surface. A young apricot tree, on which there was no fruit, lost the tips of many of its branches by the invasion of this same fungus. New shoots started, but during a renewal of the rainy weather the attack was repeated and these were in like manner killed. The fungus is certainly one capable of doing a vast amount of mischief; nor is it to be overcome by picking and destroying the affected fruit and twigs unless this is promptly done by every one in an affected district, for if the trees of one orchard or garden are cleared, the spores are quickly wafted to them again by the winds from any neglected neighboring orchard or tree.

Another minute mold-like fungus, *Rhopalomyces Cucurbitarum*, has "putrid squashes" recorded as its habitat. But in this case, as in the others, the fungus is itself the cause of the putridity in the squashes, not a consequence. Young but sound squashes scarcely out of blossom are attacked by it and quickly reduced to a pulpy putrid mass. Mature squashes are less often injured or destroyed by it unless there is a contributing cause. Sometimes centipedes eat cavities in the under side of a squash where it is in contact with the earth. Through these cavities the fungus spores gain access and quickly reduce the squash to a worthless putrid mass.

Very respectfully submitted.

CHAS. H. PECK.

ALBANY, October 1, 1891.

A.

PLANTS ADDED TO THE HERBARIUM.

New to the Herbarium.

Cardamine rotundifolia Mx.
Stellaria graminea L.
Ailanthus glandulosus Desf.
Aster Herveyi Gr.
Lysimachia nummularia L.
Plantago Patagonica Jacq.
Carya sulcata Nutt.
Carex æstivalis M. A. C.
Panicum miliaceum L.
Clitopilus carneo-albus With.
Leptonia parva Pk.
L. grisea Pk.
Galera flava Pk.
Agaricus hæmorrhoidarius Schulz.
Hypholoma subaquilum Banning.
Russula roseipes Bres.
Dædalea quercina Fr.

Septoria podophyllina Pk.
Glœosporium populinum Pk.
G. allantoideum Pk.
G. nervisequum Sacc
Puccinia Zopfii Wint.
Ustilago Triticis Jens.
U. Hordei K. & S.
Doassansia Martianoïffiana Schroet.
Entyloma Physalidis Wint.
Peronospora Rubi Rabh.
P. obovata Bon.
Sporotrichum parasiticum Pk.
Pseudopeziza Medicaginis Sacc.
Sphærotheca mors-uvæ B. & C.
S. Humuli Burrill.
Erysiphe Galeopsidis DC.

Not new to the Herbarium.

Anemone Virginiana L.
Magnolia acuminata L.
Cardamine rhomboidea DC.
Nasturtium lacustre Gr.
Hudsonia tomentosa Nutt.
Viola cucullata Ait.
V. sagittata Ait.
V. renifolia Gr.
V. pub. var. *scabriuscula* T. & G.
Dianthus Armeria L.
D. barbatus L.
Lychnis Flos-cuculi L.
Stellaria longipes Goldie.
Hypericum perforatum L.
Tilia Americana L.
Oxalis Acetosella L.
Acer sacch. var. *nigrum* T. & G.
Rubus Canadensis L.
Fragaria Indica L.
Poterium Canadense B. & H.
Pyrus communis L.
P. Malus L.
P. sambucifolia C. & S.
Thaspium barbinode Nutt.
Cicuta bulbifera L.

Conium maculatum L.
Galium trifidum L.
Solidago bic. var. *concolor* T. & G.
S. puberula Nutt.
S. uliginosa Nutt.
S. speciosa Nutt.
S. arguta Ait.
Aster undulatus L.
A. cord. var. *lævigatus* Porter.
A. vimineus Lam.
A. diffusus Ait.
A. paniculatus Lam.
A. Novi-Belgii L.
A. puniceus L.
Erigeron stri. var. *discoideus* Rob.
Antennaria plantaginifolia Hook.
Lampsana communis L.
Cirsium arvense Hoffm.
Vaccinium corymbosum L.
Lysimachia stricta Ait.
L. strict. var. *producta* Gr.
Asclepias incarnata L.
Halenia deflexa Gris.
Phlox divaricata L.
Polemonium reptans L.

- Pentstemon lævigatus Soland.*
Verbena urticifolia L.
V. hastata L.
Polygonella articulata Meisn.
Juglans nigra L.
Carya amara Nutt.
C. microcarpa Nutt.
Betula nigra L.
Quercus palustris DuRoi.
Salix nigra Marsh.
S. amygdaloides And.
Populus balsamifera L.
Corallorhiza innata R. Br.
Clintonia umbellata Torr.
Erythronium Americanum Ker.
Trillium grandiflorum Salish.
Sagittaria vari. var. gracilis Eng.
Cyperus dentatus Torr.
Eriophorum vaginatum L.
Eleocharis tuberculosa R. Br.
Juncus Balt. var. littoralis Eng.
Scirpus atrovirens Muhl.
S. microcarpus Presl.
S. sylvaticus L.
S. polyph. var. macrostachys Boeckl.
Carex Grayii Carey.
C. utric. var. minor Boott.
C. hystericina Muhl.
C. riparia Curt.
C. triceps Mx.
C. gracillima Schw.
C. Oederi Ehrh.
C. laxiflora Lam.
C. pubescens Muhl.
C. alopecoidea Tuckerm.
C. rosea var. radiata Dew.
C. varia Muhl.
C. echinata Murr.
C. trisperma Dew.
Panicum latifolium L.
P. Crus-galli L.
Muhlenbergia sobolifera Trin.
M. sylvatica T. & G.
- Agrostis vulgaris With.*
Poa comp. var. sylvestris Torr.
Agropyrum caninum R. & S.
Festuca nutans Willd.
Botrychium ternatum Sw.
Amanita cæsarea Scop.
Lepiota rhacodes Vitt.
Tricholoma album Fr.
T. personatum Fr.
Clitocybe cyathiformis Fr.
Collybia Familia Pk.
Mycena galericulata Scop.
Pholiota discolor Pk.
Hebeloma crustuliniformis Bull.
Agaricus sylvicola Fr.
Stropharia squamosa Fr.
Psilocybe spadicea Fr.
Cortinarius collinitus Fr.
Hygrophorus splendens Pk.
H. pratensis Fr.
Cantharellus lutescens Bull.
Marasmius erythropus Fr.
Boletus punctipes Pk.
Polyporus brumalis Fr.
Poria sanguinolenta Fr.
Dædalea unicolor Fr.
Hydnum pallidum C. & E.
H. stipitatum Fr.
Irpex Tulipifera Schw.
Corticium lacteum Fr.
Coniophora puteana Fr.
Tremella mesenterica Retz.
Glœosporium lagenarium S. & K.
Ramularia variabilis Fekl.
R. lineola Pk.
Bactridium flavum K. & S.
Zygodesmus fuscus Cd.
Fusarium Solani Sacc.
Tubercularia persicina Sacc.
Cystopus candidus Lev.
Vibrissea truncorum Fr.
Peziza chlora Schw.
Melogramma vagans DeNot.

Specimens from Trees.

- Magnolia acuminata L.*
Tilia Americana L.
Acer saccharinum Wang.
A. sacch. var. nigrum T. & G.
A. dasycarpum Ehrh.
- Betula lenta L.*
B. populifolia Ait.
B. papyrifera Marsh.
B. nigra L.
Ostrya Virginica Willd.

Prunus Pennsylvanica L.
P. serotina Ehrh.
Ulmus fulva Mx.
U. Americana L.
U. racemosa Thomas.
Celtis occidentalis L.
Morus rubra L.
Platanus occidentalis L.
Juglans nigra L.
J. cinera L.
Carya sulcata Nutt.
C. porcina Nutt.
C. amara Nutt.
Quercus palustris DuRoi.
Betula lutea Mx.

Carpinus Caroliniana Walt.
Fagus ferruginea Ait.
Castanea sat. var. Americana Mx.
Salix nigra Marsh.
Populus balsamifera L.
P. bal. var. candicans Gr.
P. monilifera Ait.
Pinus Strobus L.
P. rigida Mill.
P. resinosa Ait.
Abies balsamea Mill.
Larix Americana Mx.
Thuya occidentalis L.
Juniperus Virginiana L.

B.

CONTRIBUTORS AND THEIR CONTRIBUTIONS.

Mrs. Hannah Gould, Hudson, N. Y.

Carex glaucescens, Ell.
C. longirostris Torr.
C. oligosperma Mx.
C. Tuckermanni Boott.
C. bullata Schk.
C. ampullacea Good.
C. monile Tuckerm.
C. Schweinitzii Dew.
C. retrorsa Schw.
C. stenolepis Torr.
C. squarrosa L.
C. lupuliformis Sart.
C. lupulina Muhl.
C. subulata Mx.
C. turgescens Torr.
C. rostrata Mx.
C. folliculata L.
C. Elliottii S. & T.
C. Grayii Carey.
C. intumescens Rudge.
C. tentaculata Muhl.
C. hystricina Willd.
C. pseudo-cyperus L.
C. comosa Boott.
C. trichocarpa Muhl.
C. aristata R. Br.
C. lacustris Willd.
C. striata Mx.
C. Halseyana Dew.
C. vestita Willd.

Carex eburnea Boott.
C. Hitchcockiana Dew.
C. oligocarpa Schk.
C. ignota Dew.
C. blanda Dew.
C. laxiflora Lam.
C. digitalis Willd.
C. retrocurva Dew.
C. platyphylla.
C. Careyana Dew.
C. plantaginea Lam.
C. hirsuta Willd.
C. virescens Muhl.
C. gracillima Schw.
C. formosa Dew.
C. Davisii S. & T.
C. flaccosperma Dew.
C. grisea Wahl.
C. conoidea Schk.
C. pallescens L.
C. Meadii Dew.
C. Woodii Dew.
C. crinita Lam.
C. cephaloidea Dew.
C. alopecoidea Tuckerm.
C. Leavenworthii Dew.
C. scabrior Sart.
C. disticha Huds.
C. granularis Muhl.
C. Crawei Dew.

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| <i>Carex lanuginosa</i> Mx. | <i>Carex tetanica</i> Schk. |
| C. <i>filiformis</i> L. | C. <i>panicea</i> L. |
| C. <i>Öderi</i> Ehrh. | C. <i>livida</i> Willd. |
| C. <i>flava</i> L. | C. <i>aurea</i> Nutt. |
| C. <i>Cherokeënsis</i> Schw. | C. <i>Shortiana</i> Dew. |
| C. <i>flexilis</i> Rudge. | C. <i>atrata</i> L. |
| C. <i>capillaris</i> L. | C. <i>Buxbaumii</i> Wahl. |
| C. <i>venusta</i> Dew. | C. <i>irrigua</i> Sm. |
| C. <i>debilis</i> Mx. | C. <i>limosa</i> L. |
| C. <i>arctata</i> Boott. | C. <i>flacca</i> Schreb. |
| C. <i>Sullivantii</i> Boott. | C. <i>salina</i> Wahl. |
| C. <i>scabrata</i> Schw. | C. <i>aquatis</i> Wahl. |
| C. <i>miliacea</i> Muhl. | C. <i>stricta</i> Lam. |
| C. <i>Chapmani</i> Sart. | C. <i>strictior</i> Dew. |
| C. <i>pubescens</i> Muhl. | C. <i>acuta</i> L. |
| C. <i>præcox</i> Jacq. | C. <i>vulgaris</i> Fr. |
| C. <i>Richardsoni</i> R. Br. | C. <i>torta</i> Boott. |
| C. <i>varia</i> Muhl. | C. <i>rigida</i> v. <i>Bigelovii</i> Tuckerm. |
| C. <i>Pennsylvanica</i> Lam. | C. <i>straminea</i> Schk. |
| C. <i>lucorum</i> Willd. | C. <i>alata</i> Torr. |
| C. <i>Emmonsii</i> Dew. | C. <i>foenea</i> Muhl. |
| C. <i>umbellata</i> Schk. | C. <i>mirabilis</i> Dew. |
| C. <i>Baltzellii</i> Chapm. | C. <i>tenera</i> Dew. |
| C. <i>pedunculata</i> Muhl. | C. <i>festucea</i> Schk. |
| C. <i>cristata</i> S. & T. | C. <i>cephaloidea</i> Dew. |
| C. <i>lagopodioides</i> Schk. | C. <i>sparganioides</i> Muhl. |
| C. <i>scoparia</i> Schk. | C. <i>stipata</i> Muhl. |
| C. <i>Liddoni</i> Boott. | C. <i>alopecoidea</i> Tuckerm. |
| C. <i>arida</i> S. & T. | C. <i>Crus-corvi</i> Shutt. |
| C. <i>syncocephala</i> Carey. | C. <i>decomposita</i> Muhl. |
| C. <i>sterilis</i> Schk. | C. <i>vulpinoidea</i> Mx. |
| C. <i>scirpoides</i> Schk. | C. <i>prairiea</i> Dew. |
| C. <i>Deweyana</i> Schw. | C. <i>Sartwellii</i> Dew. |
| C. <i>stellulata</i> Good. | C. <i>teretiuscula</i> Good. |
| C. <i>sphærostachya</i> Dew. | C. <i>siccata</i> Dew. |
| C. <i>canescens</i> L. | C. <i>Backii</i> Boott. |
| C. <i>tenuiflora</i> Wahl. | C. <i>Steudelii</i> Kunth. |
| C. <i>trisperma</i> Dew. | C. <i>Willdenowii</i> Schk. |
| C. <i>gracilis</i> Ehrh. | C. <i>bromoides</i> Schk. |
| C. <i>Fraseri</i> Sims. | C. <i>polytrichoides</i> Muhl. |
| C. <i>chordorhiza</i> Ehrh. | C. <i>pauciflora</i> Light. |
| C. <i>retroflexa</i> Muhl. | C. <i>capitata</i> L. |
| C. <i>rosea</i> Schk. | C. <i>scirpoidea</i> Mx. |
| C. <i>Muhlenbergii</i> Schk. | C. <i>dioica</i> L. |
| C. <i>cephalophora</i> Muhl. | |

Mrs. E. C. Anthony, Gouverneur, N. Y.

Viola cucullata Ait.

Mrs. L. L. Goodrich, Syracuse, N. Y.

Fragaria Indica L.

Prof. D. C. Eaton, New Haven, Conn.

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| <i>Adiantum Kaulfussii</i> Kze. | <i>Danaea elliptica</i> Sm. |
| A. <i>intermedium</i> Sw. | <i>Davallia inæqualis</i> Kze. |
| A. <i>tetraphyllum</i> Willd. | D. <i>saccoloma</i> Spreng. |
| A. <i>pulverulentum</i> L. | <i>Dicksonia cicutaria</i> Sw. |
| A. <i>lucidum</i> Sw. | <i>Gymnogramme calomelanos</i> Kaulf. |
| A. <i>villosum</i> L. | <i>Gleichenia pubescens</i> H. B. K. |
| A. <i>macrophyllum</i> Sw. | G. <i>pectinata</i> Presl. |
| A. <i>tenerum</i> Sw. | <i>Hemionitis palmata</i> L. |
| A. <i>obtusum</i> Desv. | <i>Hemitelia grandifolia</i> Spreng. |
| A. <i>polyphyllum</i> Willd. | <i>Hymenophyllum ciliatum</i> Sw. |
| <i>Aspidium molle</i> Sw. | <i>Hypoderris Brownii</i> Sm. |
| A. <i>macrophyllum</i> Sw. | <i>Lindsæa stricta</i> Dry. |
| A. <i>subquinquefidum</i> Bv. | L. <i>trapeziformis</i> Dry. |
| A. <i>invisum</i> Sw. | <i>Lygodium venustum</i> Sw. |
| A. <i>amplum</i> Mett. | L. <i>volubile</i> Sw. |
| A. <i>melagodes</i> Mett. | <i>Meniscium reticulatum</i> Sw. |
| A. <i>Sprengelii</i> Kaulf. | <i>Nephrolepis acuta</i> Presl. |
| A. <i>semicordatum</i> Sw. | N. <i>exaltata</i> Presl. |
| A. <i>trifoliatum</i> Sw. | <i>Oleandra nodosa</i> Presl. |
| A. <i>effusum</i> Gris. | O. <i>neriiformis</i> Cav. |
| A. <i>Imrayanum</i> Fee. | <i>Phegopteris crenata</i> Mett. |
| <i>Asplenium Shepherdii</i> Spreng. | P. <i>flavopunctata</i> Fee. |
| A. <i>grandifolium</i> Sw. | <i>Pteris pungens</i> Willd. |
| A. <i>lunulatum</i> Sw. | P. <i>aquil. v. esculenta</i> H. & B. |
| A. <i>crenulatum</i> Baker. | <i>Polypodium aureum</i> L. |
| A. <i>cultrifolium</i> L. | P. <i>incanum</i> Sw. |
| <i>Aneimia Phyllitidis</i> Sw. | P. <i>neriifolium</i> Schk. |
| A. <i>Breuteliana</i> Presl. | P. <i>vacciniifolium</i> L. |
| <i>Acrostichum sorbifolium</i> L. | P. <i>nematorhizon</i> Eaton |
| A. <i>osmundaceum</i> Hook. | P. <i>serrulatum</i> Mett. |
| A. <i>flaccidum</i> Fee. | P. <i>lycopodioides</i> L. |
| A. <i>cervinum</i> L. | P. <i>piloselloides</i> H. & B. |
| A. <i>nicotianifolium</i> Sw. | <i>Trichomanes crispum</i> L. |
| A. <i>caudatum</i> Hook. | T. <i>pinnatum</i> Hedw. |
| <i>Alsophila nitens</i> Sm. | T. <i>sinuosum</i> Rich. |
| A. <i>ferox</i> Presl. | T. <i>membranaceum</i> L. |
| A. <i>blechnoides</i> Hook. | T. <i>Prieurii</i> Kye. |
| <i>Blechnum occidentale</i> L. | T. <i>spicatum</i> Hedw. |
| B. <i>longifolium</i> H. B. K. | <i>Lycopodium cernuum</i> Lve. |
| B. <i>volubile</i> Kaulf. | <i>Selaginella patula</i> Spreng. |
| <i>Cheilanthes radiata</i> R. Br. | S. <i>serpens</i> Spreng. |
| <i>Cyathea Schanshin</i> Mart. | |

Prof. N. L. Britton, New York, N. Y.

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| <i>Nymphaea reniformis</i> DC. | <i>Vaccinium corymbosum</i> L. |
| <i>Nelumbium nuciferum</i> Gært. | V. <i>disocarpum</i> Bigel. |
| <i>Lathyrus maritimus</i> Bigel. | <i>Halenia deflexa</i> Gris. |
| <i>Aster cordifolius</i> L. | <i>Carya microcarpa</i> Nutt. |
| <i>Vaccinium vacillans</i> Sibth. | <i>Juncus Balticus</i> Deth. |
| V. <i>Pennsylvanicum</i> Lam. | <i>Eleocharis tuberculosa</i> R. Br. |

Prof. B. D. Halsted, New Brunswick, N. J.

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| Peronospora Rubi <i>Rabh.</i> | Peronospora parasitica <i>DeBy.</i> |
| P. alta <i>Fekl.</i> | Plasmopara viticola <i>B. & C.</i> |
| P. obovata <i>Bon.</i> | Puccinia Spergulae <i>DC.</i> |

Rev. F. D. Kelsey, Helena, Mont.

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| Phragmidium subcorticium <i>Wint.</i> | Æcidium Pini <i>Pers.</i> |
| Puccinia intermixta <i>Pk.</i> | Æ. Clematidis <i>DC.</i> |
| P. Tanacetii <i>DC.</i> | Æ. Ranunculacearum <i>DC.</i> |
| P. Menthae <i>Pers.</i> | Æ. porosum <i>Pk.</i> |
| P. Malvastri <i>Pk.</i> | Æ. Allenii <i>Clint.</i> |
| P. Troximontis <i>Pk.</i> | Æ. Cleomis <i>E. & A.</i> |
| P. Giliae <i>Hark.</i> | Æ. Asterum <i>Schw.</i> |
| P. Phragmitis <i>Korn.</i> | Æ. Violae <i>Schum.</i> |
| P. mirabilissima <i>Pk.</i> | Æ. Compositarum <i>Mart.</i> |
| P. emaculata <i>Schw.</i> | Æ. Thalictri <i>Grev.</i> |
| P. Thlaspeos <i>Schub.</i> | Æ. Eurotiae <i>E. & E.</i> |
| P. Hieracii <i>Mart.</i> | Æ. gaurinum <i>Pk.</i> |
| Uromyces Eriogoni <i>E. & H.</i> | Æ. monoicum <i>Pk.</i> |
| U. Trifolii <i>Lev.</i> | Æ. Plantaginis <i>Cke.</i> |
| U. borealis <i>Pk.</i> | Erysiphe communis <i>Wallr.</i> |
| Ustilago segetum <i>Dittm.</i> | E. Cichoracearum <i>DC.</i> |
| Melanospora farinosa <i>Pers.</i> | Sphaerotheca Castagnei <i>Lev.</i> |
| M. Cerastii <i>Schroet.</i> | Phyllactinia suffulta <i>Reb.</i> |
| M. Lini <i>Tul.</i> | Microsphaeria Ravenelii <i>B.</i> |
| Coleosporium Solidaginis <i>Thum.</i> | Valsa boreella <i>Karst.</i> |
| Cronartium Comandrae <i>Pk.</i> | Physalospora megastoma <i>Sacc.</i> |
| Roestelia lacerata <i>Tul.</i> | Leptosphaeria Typharum <i>Desm.</i> |
| Cystopus candidus <i>Lev.</i> | Phyllachora Wittrockii <i>Erik.</i> |
| Ramularia arnicalis <i>E. & E.</i> | |

C. L. Shear, Alcove, N. Y.

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| Agaricus placomyces <i>Pk.</i> | Plantago Patagonica <i>Jacq.</i> |
| Puccinia Zopfii <i>Wint.</i> | Entyloma Castaliae <i>Holway.</i> |
| P. Rhodiola <i>B. & Br.</i> | E. Yuccæfoliae <i>Holway.</i> |
| Uromyces perigynius <i>Halsted.</i> | |

P. H. Dudley, New York, N. Y.

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| Xylaria Hypoxylon <i>Fr.</i> | Trametes Pini <i>Fr.</i> |
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A. P. Morgan, Preston, O.

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| Tilmadoche columbina <i>Berk.</i> | Physarum albicans <i>Pk.</i> |
| Cornuvia elegans <i>Morg.</i> | Dermodium conicum <i>Pers.</i> |

Roland Thaxter, New Haven, Conn.

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| Rhopalomyces strangulatus <i>Thax.</i> | Sporotrichum globuliferum <i>Speg.</i> |
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J. B. Ellis, Newfield, N. J.

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| Cercospora Asiminæ <i>E. & K.</i> | |
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Chas. L. Williams, Glens Falls, N. Y.

Lysimachia stricta Ait. var. *producta* Gr.

Prof. S. M. Tracy, Agricultural College, Miss.

By exchange.

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| <i>Agropyrum tenerum</i> Vasey. | <i>Oplismenus setarius</i> R. & S. |
| A. <i>glaucum</i> R. & S. | <i>Poa tenuiflora</i> Nutt. |
| A. <i>divergens</i> Nees. | P. <i>Traceyi</i> Vasey. |
| <i>Avena flavescens</i> L. | P. <i>alpina</i> L. |
| A. <i>pratensis</i> L. | P. <i>compressa</i> L. |
| A. <i>sterilis</i> L. | P. <i>gracillima</i> Vasey. |
| <i>Aristida stricta</i> Mx. | P. <i>flexuosa</i> Muhl. |
| A. <i>stipoides</i> R. Br. | P. <i>cenisia</i> All. |
| A. <i>oligantha</i> Mx. | P. <i>cæsia</i> Sm. |
| <i>Alopecurus agrestis</i> L. | <i>Poppophorum Wrightii</i> Wats. |
| <i>Anthænantia rufa</i> Benth. | <i>Polypogon maritimus</i> L. |
| A. <i>villosa</i> Bv. | <i>Phleum alpinum</i> L. |
| <i>Bromus erectus</i> Huds. | <i>Panicum viscidum</i> Ell. |
| <i>Bouteloua hirsuta</i> Lag. | P. <i>serotinum</i> Trin. |
| <i>Beckmannia erucæformis</i> Huds. | P. <i>scoparium</i> Lam. |
| <i>Cynosurus echinatus</i> L. | P. <i>Palmeri</i> Vasey. |
| <i>Cottea pappaphoroides</i> Kth. | P. <i>obtusum</i> H. B. K. |
| <i>Chloris acicularis</i> R. Br. | P. <i>microcarpum</i> Muhl. |
| C. <i>Swartziana</i> Dcell. | P. <i>glabrum</i> Ell. |
| <i>Ctenium Americanum</i> Spreng. | P. <i>effusum</i> R. Br. |
| <i>Coix lachryma</i> L. | P. <i>dichotmum</i> v. <i>viride</i> Vasey. |
| <i>Diplachne Tracyi</i> Vasey. | P. <i>autumnale</i> Bosc. |
| D. <i>imbricata</i> Vasey. | P. <i>commutatum</i> ch. |
| <i>Deyeuxia neglecta</i> Kth. | <i>Paspalum dilatatum</i> Poir. |
| <i>Elymus Macounii</i> Vasey. | P. <i>Floridanum</i> Mx. |
| <i>Eragrostis campestris</i> Tris. | P. <i>platycaul</i> P. ir. |
| <i>Eatonia obtusata</i> Gr. | P. <i>purpurascens</i> Ell. |
| <i>Eleusine Ægyptiaca</i> Pers. | <i>Roteboellia rugosa</i> Nutt. |
| <i>Erianthus saccharoides</i> Mx. | <i>Schedonnardus Texanus</i> Steud. |
| <i>Festuca elatior</i> L. | <i>Setaria setosa</i> Bv. |
| <i>Glyceria distans</i> Wahl. | <i>Sporobolus junceus</i> Kth. |
| <i>Hordeum murinum</i> L. | S. <i>depauperatus</i> Vasey. |
| <i>Koeleria cristata</i> Pers. | S. <i>ramulosus</i> Kth. |
| <i>Leptochloa mucronata</i> Kth. | S. <i>asperifolius</i> N. & M. |
| <i>Leersia hexandra</i> Sw. | <i>Tragus racemosus</i> Hall. |
| <i>Munroa squarrosa</i> Torr. | <i>Uniola paniculata</i> L. |
| <i>Oryzopsis cuspidata</i> Benth. | |

C. E. Fairman, M. D., Lyndonville, N. Y.

Gloeosporium allantoideum Pk. | *Rhizopus nigricans* Ehr.

L. H. Cress, Fremont, Ohio.

Morchella conica Pers.

E. L. Hankenson, Newark, N. Y.

Lychnis Flos-cuculi L. | *Lampsana communis* L.

F. L. Henderson, Olympia, Wash.

Mycena strobilinoidea Pk.

| *Nidularia candida* Pk.

Exobasidium Cassiopes Pk.

M. E. Jones, Salt Lake City, Utah.

Septoria Peraphylli Pk.

| *Uromyces deciduus* Pk.

F. L. Hervey, Orono, Maine.

Clavaria Herveyi Pk.

C. F. Millspaugh, Morganstown, W. Va.

Septosporium Equiseti Pk.

Prof. W. R. Dudley, Ithaca, N. Y.

Pentstemon lævigatus Sol.

Arthur M. Peck, Sandlake, N. Y.

Populus balsamifera L.

(C.)

PLANTS NOT BEFORE REPORTED.

Cardamine rotundifolia Mx.

Springy and wet places. Carrollton, Cattaraugus county. June.

New Jersey and Pennsylvania have heretofore been considered the northern limit of this plant, but it is plentiful in at least two localities near Carrollton.

Stellaria graminea L.

Roadsides. Sandlake, Rensselaer county; New Scotland, Albany county. June and July. A pretty little species introduced from Europe and resembling somewhat the native species, *S. longifolia* and *S. longipes*, but distinct from both by its leaves and rough seeds.

Ailanthus glandulosus Desf.

Roadsides and waste places. Long Island; Cold Spring, Putnam county; Marlborough, Ulster county. This rapid-growing tree, introduced from China, often springs up spontaneously by roadsides and in waste places about cities and villages. It has been represented to me as spreading so rapidly in some places that it is troublesome.

Aster Herveyi Gray.

Borders of woods. Salamanca, Cattaraugus county. September.

This species might easily be taken for a bright violet-rayed form of *A. macrophyllus*, but it differs from that species in its glandular pubescent floral branches and peduncles.

Lysimachia nummularia L.

Wilton, Saratoga county. July. Introduced and escaped from cultivation.

Plantago Patagonica Jacq. var. aristata Gr.

Sandy fields. Alcove, Albany county. August. C. L. Shear. Probably a recent introduction.

Carya sulcata Nutt.

Alluvial soil along the inlet of Owasco lake. July.

This hickory was first observed in this locality by Professor Dudley. The trees are not numerous but thrifty. Their leaves are very large, some of them measuring nearly two feet in length including the petiole. The terminal leaflet measures ten to twelve inches long and three to three and a half inches broad in the dried specimens. Withered aments were seen but no young fruit.

Carex æstivalis M. A. C.

Woods. East Worcester, Otsego county. July.

This plant somewhat resembles slender forms of *Carex arctata*, but from that species it may be distinguished by its more slender and erect spikes, its less pointed perigynia, shorter scales and by the pistillate flowers or perigynia at the top of the staminate spike.

Panicum miliaceum L.

Ithaca. Professor Dudley. Todt Hill road, near the Moravian church, Richmond county. A. Hollick. This millet has been introduced and is occasionally spontaneous. It is a beautiful and an interesting grass.

Clitopilus carneo-albus With.

Shaded ground. Menands. June.

Leptonia parva n. sp.

Pileus thin, convex or nearly plane, umbilicate, slightly radiate-striate, violaceous-brown, the umbilicus darker and squamulose; lamellæ subdistant, adnate, whitish tinged with flesh-color; stem slender, glabrous, solid, colored like the pileus; spores irregular or angular, uninucleate, about .0003 in. long, .00025 broad.

Pileus about 6 lines broad; stem about 1 in. long, scarcely 1 line thick.

Woods. Lake Pleasant, Hamilton county. August.

The color of the pileus is almost exactly like that of dark-colored forms of *L. serrulata*, but its smaller size, whitish lamellæ without darker serrated edge and stem not punctate at the top separate it.

Leptonia grisea n. sp.

Pileus broadly convex or plane, umbilicate, striatulate when moist, glabrous except the squamulose umbilicus, grayish brown; lamellæ broad, subdistant, grayish; stem slender, hollow, glabrous, colored like the pileus; spores subglobose, angular, uninucleate, .0003 to .0004 inches in diameter.

Pileus 6 to 12 lines broad; stem 1.5 to 2.5 inches long, 1 line thick.

Among sphagnum and in wet woods, Lake Pleasant. August.

The species is easily known by its nearly uniform grayish color and its globose spores.

Galera flava n. sp.

Pileus thin, ovate or campanulate, obtuse, finely plicate-striate to the middle, yellow; lamellæ thin, narrow, close, adnate, at first whitish, then yellowish-cinnamon; stem equal or slightly tapering upward, hollow, sprinkled with white mealy particles, slightly striate at the top, white or slightly tinged with yellow; spores brownish-ferruginous, ovate or subelliptical, .0005 inches long; .0003 broad.

Pileus 6 to 12 lines broad; stem 2 to 3 inches long, 1 to 2 lines thick.

Damp vegetable mold in woods. Freeville, Tompkins county. July.

The pileus is moist or subhygrophanous, and when dry it appears to be sprinkled with shining atoms. The yellow epidermis sometimes breaks up into squamules.

Agaricus hæmorrhoidarius Schulzer.

Ground under hemlocks. Menands. August.

This species is easily known, when fresh, by wounds upon any part of it quickly changing to red, as if about to bleed. The habitat usually ascribed to it is "About the roots of oaks," but our specimens were found growing under a hemlock tree. Gillet gives Fries as the author of the species, Fries ascribes it to Kalchbrenner and Kalchbrenner to Schulzer.

The pileus is at first covered with a fawn-colored or tawny-brown tomentum which soon breaks up and forms scales. The flesh is white and the lamellæ are at first whitish, soon flesh-colored, then brown. The spores are brown, elliptical, .0002 to .00025 in. long, .00016 broad.

Hypholoma subaquilum *Banning.*

Decaying wood. Adirondack mountains. August and September.

This species is closely allied to *H. appendiculatum*, but may be separated by its darker color, and especially by the darker color of its lamellæ.

Russula roseipes *Bres.*

Under hemlock trees. Menands. August. It might easily be taken for a small form of *R. alutacea*, from which its more strongly striate-tuberculate margin distinguishes it. It is edible.

Dædalea quercina *Fr.*

Dead stumps and trunks of oak. Selkirk, Albany county. August.

Septoria podophyllina *Pk.*

Living and languishing leaves of mandrake, *Podophyllum peltatum*. Freeville. July.

Glœosporium nervisequum *Sacc.*

Living leaves of sycamore, *Platanus occidentalis*. McLean, Tompkins county. July.

This fungus attacks the foliage and young branches early in the season and is often quite injurious to the tree. It manifests its presence either by discolored spots which follow the principal veins of the leaf, or by producing broad and irregular brown patches in the leaf. When the attack is severe it kills the entire leaf or even the branch and all its leaves. Indeed, it is said sometimes to be fatal to the tree.

Glœosporium populinum *n. sp.*

Spots small, 1 to 2 lines broad, nearly orbicular, reddish-brown, often paler in the center and then appearing to be surrounded by a broad darker margin, paler on the lower surface; heaps of spores hypophyllous, either single and central or several more or

less concentrically arranged; spores subcylindrical, often a little curved, supported by slender sporophores, oozing out and forming a reddish mass, .001 to .0016 in. long, about .00012 in. broad.

Living leaves of poplar, *Populus grandidentata*. Freeville. July.

This species may be distinguished from other species of *Gloeosporium* growing on poplar, by its narrow elongated spores which are not much unlike those of some species of *Septoria*. From *Cylindrosporium* it is separated by the agglutinated spore mass. From *G. stenosporum*, which occurs in Kansas on leaves of *Populus monilifera*, it differs in its smaller darker-colored spots, and in its darker-colored spore-masses, which are hypophyllous, and in its longer and simple spores.

***Gloeosporium allantoideum* n. sp.**

Heaps minute, numerous; spores cylindrical, curved, obtuse, .0005 to .0008 in. long, oozing out and forming minute whitish masses which are concentrically arranged.

Rind of pumkin. Lyndonville. January. C. E. Fairman.

The heaps are sometimes overrun by mucedinous filaments. The species is distinguished from *G. lagenarium* by its curved spores.

***Puccinia Zopfii* Wint.**

Living leaves of cowslips, *Caltha palustris*. Buffalo. G. W. Clinton.

In reviewing some specimens of *Puccinia* on leaves of *Caltha palustris* sent me several years ago by the late Judge Clinton, I find some belonging to this species. He also sent me the true *Puccinia Calthæ*, so that these species meet on common ground in the western part of the State.

***Ustilago Tritici* Jensen.**

Heads of wheat, *Triticum vulgare*. Meadowdale, Albany county. June.

This and the next following species have by most writers been included with the smut on oats as mere forms or varieties of the one comprehensive species *Ustilago segetum*. But Jensen indicated their distinct character, and the investigations of Professors Kellerman and Swingle have confirmed his views.

Ustilago Hordei K. & S.

Heads of barley, *Hordeum vulgare*. Sevey, St. Lawrence county and McLean, Tompkins county. July.

Another species of smut, *Ustilago nuda* also occurs on barley, but I have seen no specimens of it. It differs from the present species in having less globose spores, with the éispore spiny and the color of the spores in the mass brown instead of black.

Doassansia Martianooffiana Schreet.

Living leaves of pondweed. Near the outlet of Marl pond, Cortland county. July. The water in which the pondweed grew had evaporated and left the plants stretched upon the muddy soil. They were small and apparently dwarfed, and now being deprived of their normal quantity of water is it any wonder that they yielded to the attacks of their parasite?

Entyloma Physalidis Wint.

Living leaves of the viscid ground cherry, *Physalis Virginiana*. Menands. August.

Peronospora Rubi Rabh.

Living leaves of blackberry, *Rubus villosus*. Cold Spring, Long Island. July. *B. D. Halsted*.

Peronospora obovata Bon.

On corn spurry, *Spergula arvensis*. Liberty, Sullivan county. July. *Halsted*.

Sporotrichum parasiticum n. sp.

Effused, minute, white; hyphæ very slender and delicate, irregularly branched; spores numerous, minute, elliptical, .00012 to .00016 inches long, .00008 broad.

On excrescences of the black knot, *Plowrightia morbosa*. Menands. July.

This fungus forms a thin white coating over the surface of the excrescence. It is often quite conspicuous because of the dark color of the background. It attacks young as well as old black knots, and in the former case it apparently prevents the free formation of the perithecia of the black knot, and should therefore be regarded as a useful fungus. It is sometimes accompanied by *Trichothecium roseum*.

Septocylindrium scirpinum *n. sp.*

Forming minute, somewhat confluent, flocculent white tufts; spores narrowly fusiform, pointed at one or both ends, .0003 to 0.2. inches long, .00016 to .00025 broad, with one to six septa.

Dead spikelets of cotton grass, *Eriophorum cyperinum*. Lake Pleasant. August.

Pseudopeziza Medicaginis *Sacc.*

Living or languishing leaves of nonesuch, *Medicago lupulina*. Menands. July.

Sphærotheca mors-uvæ *B. & C.*

Fruit and leaves of gooseberry, *Ribes Cynosbati*. Sprakers, Montgomery county, and Bergen, Genesee county. June.

Sphærotheca Humuli *Burrill.*

Living leaves of agrimony, *Agrimonia Eupatoria*. Newburgh. Also of marsh five-finger, *Potentilla palustris*. Adirondack mountains. Specimens have also been collected on *Rubus odoratus*, *R. triflorus*, *Poterium Canadense* and *Physocarpus opulifolius* which apparently belong here.

Erysiphe Galeopsidis *DC.*

Living leaves of hemp nettle, *Galeopsis Tetrahit*, rough hedge nettle, *Stachys aspera*, mad dog skullcap, *Scutellaria lateriflora*. Tyre, Seneca county and Sandlake. August and September.

The following species are extra-limital. Specimens of them have been sent to me for identification, but I find no descriptions that harmonize with their characters. They are therefore recorded here as new species.

Mycena strobilinoidea *n. sp.*

Pileus thin, subcampanulate, obtuse, glabrous, bright scarlet; lamellæ whitish, reddish on the edge; stem short, glabrous but with a tawny villosity at the base, colored like but a little paler than the pileus.

Pileus 4 to 6 lines broad; stem about 1 inch long.

Under *Abies subalpina*. Olympia mountain, Washington. "Appearing soon after the snow disappears." *L. F. Henderson.*

The species belongs to the section *Calodontes*, and is distinguished from *M. strobilina* by its obtuse pileus and the colored villosity at the base of the stem.

Clavaria Herveyi *n. sp.*

Gregarious or subcaespitose, simple or with a few branches, often compressed or irregular, scarcely one inch high, golden-yellow, sometimes brownish at the apex, flesh white, branches when present short, simple or terminating in few or many more or less acute denticles; spores globose, .0003 in. broad, minutely roughened; mycelium white.

Ground under hemlock trees. Orono, Maine. September.
F. L. Hervey.

Allied to *C. fastigiata* and *C. muscoides* but distinct from both by its more irregular and less branching character and by its larger spores.

Exobasidium Cassiopes *n. sp.*

Attacking the young shoots and all their leaves, thickening and enlarging them; spores oblong, .0005 in. long.

On *Cassiope Mertensiana*. Olympia, Washington. *Henderson.*

The galls are very variable in color, and may be either pinkish, red, purple or whitish purple.

Nidularia candida *n. sp.*

Peridium externally tomentose, white, becoming cup-shaped, within glabrous, snowy-white, the mouth wide, entire; peridiola numerous, .035 to .05 in. broad, lenticular, brown, marked with numerous diverging and intercrossing blackish lines; spores broadly elliptical, .0003 in. long, .0002 broad.

Ground among mosses. Olympia, Washington. July.
Henderson.

All the peridia seen were fully open, and therefore their shape and character when young remain unknown. The size and shape of the native plant are similar to those of *Crucibulum vulgare*. The peridiola are smaller than in that species and of a darker color. The absence of the funiculus places the species in the genus *Nidularia*.

Septoria Peraphylli *n. sp.*

Spots rather large, 2 to 4 lines broad, one or two on a leaf, suborbicular, reddish brown, sometimes with a whitish center above; perithecia epiphyllous, slightly prominent, black, shining; spores subcylindrical, straight or somewhat curved, or subflexuous

and slightly unequal, few or many-nucleate, sometimes obscurely uniseptate, colorless or slightly colored, .001 to .0016 in. long, .00025 to .0003 broad.

Living leaves of *Peraphyllum ramosissimum*. Southern Utah. June. *M. E. Jones*.

This is an aberrant species with the spores unusually broad and variable and the perithecia rather large and somewhat unequal.

Septosporium Equiseti n. sp.

Hyphæ forming minute tufts, the fertile very short, bearing acrogenous spores, the sterile longer, septate, colored; spores elliptical, usually with three transverse septa and one or two longitudinal ones, colored, .001 in. long, .0005 broad.

Dead tips of branches of *Equisetum arvense*. West Virginia. June. *C. F. Millspaugh*.

Uromyces deciduus n. sp.

Spots none; sori minute, rotund, pulverulent, hypophyllous or amphigenous, often surrounding the young branches and occupying the whole lower surface of the leaflets, less abundant on the upper surface, rusty-brown; teleutospores oblong-elliptical or oblong-pyriform, .0008 to .0012 in. long, .0005 to .0006 broad, with the epispore roughened or verruculose, quickly deciduous from the short pedicel, a few abruptly clavate or capitate paraphyses intermingled with the teleutospores, .0012 to .0016 in. long.

Living leaflets and young branches of the screw bean, *Prosopis pubescens*. Mescal mountains, Arizona. May. *Jones*.

This species is easily known by its quickly deciduous spores and the intermingled capitate paraphyses. The pedicels are from one-fourth to one-half the length of the spores. "The fungus does not kill the leaves but causes the stem to form fascicles or bird's-nest clusters of branchlets near the end of the present year's growth."

(D.)

REMARKS AND OBSERVATIONS.

Corydalis flavula D. C.

In the Manual, Pennsylvania is given as the northeastern limit in the range of this species. It has been collected in New York, in Ulster county by the late W. H. Leggett, and in Onondaga county by Prof. L. E. Underwood.

Nasturtium lacustre Gr.

A terrestrial form of this plant occurs along the inlet of Owasco lake. The leaves are early and easily deciduous

Hudsonia tomentosa Nutt.

Sandy shore of Lake Pleasant, Hamilton county.

The plants in this remarkably inland station differ so much from the typical form of the species that I am disposed to consider them a good variety. They are intermediate between *H. tomentosa* and *H. ericoides* and may therefore bear the name

Var. *intermedia*. Stems and branches more slender and longer; leaves narrow, less imbricating and less tomentose; flowers on pedicels mostly a little longer than the leaves.

The variation in the leaves, downy tomentum and pedicels is in every case toward *H. ericoides*.

Viola blanda Willd. var. renifolia Gr.

Mossy ground in woods. Helderberg mountains.

Viola cucullata Ait.

A form with variegated flowers. Gouverneur. Mrs. E. C. Anthony.

Lychnis Flos-cuculi L.

Grassy yard. Newark. E. L. Hankenson.

The specimens are unusually small and few-flowered.

Lathyrus ochroleucus Hook.

Common about Carrollton. June.

Fragaria Indica L.

Banks of Onondaga creek. Mrs. L. L. Goodrich.

The specimens sent by Mrs. Goodrich appear to be dwarfed. They are very much smaller than those from Staten Island. The fruit is borne singly in the axils of the leaves of the runners. The seeds are superficial on the receptacle as in *F. vesca* and in our specimens are bright red, thus giving a beautiful appearance to an insipid fruit. The petals are yellow. The plant has been introduced and probably has escaped from cultivation.

***Cicuta bulbifera* L.**

In our State this plant usually blossoms and fruits very sparingly. Generally but a single umbel of flowers is developed and that terminates the main stem. Sometimes the two uppermost branches, which usually overtop the stem, are also terminated each by an umbel of flowers. Rarely very thrifty plants are still better furnished with flowers. The branches are generally well furnished with bulblets. The more the flowers the fewer the bulblets.

***Solidago uliginosa* Nutt.**

Lake Pleasant. August.

This is a peculiar form in which the panicle is small, dense, oblong or thyriform and mostly somewhat recurved.

***Aster undulatus* L.**

A very noticeable form of this species is found in dry sandy soil at Karner and also on Long Island. The leaves are thick, scabrous above, wavy on the margin, broadly or narrowly ovate, dark colored and all, except three or four near the base of the stem, are sessile by a heart-shaped base. The branches are clothed by ovate or oblong-ovate abruptly pointed bracts and bear the flowers mostly near the end either singly or somewhat clustered.

It might easily be thought to be a hybrid between *Aster undulatus* and *A. patens* which is generally associated with it or found near it, though this species flowers earlier than *A. undulatus*.

***Aster cordifolius* L. var. *lævigatus* Porter.**

Woods and open places. Lake Mohonk, Ulster county. September.

This variety of the heart-leaved aster was discovered by Professor Porter in Pennsylvania. It also occurs in New Jersey, where Professor Britton says, it is quite as abundant as the species itself. It has also been reported from Staten Island and Westchester county in this State, but has not before been found so far north as Lake Mohonk. It is a variety strongly marked by the wing-margined petioles, the longer smooth leaves with

pale under surface and more blunt and oppressed serratures. The flower-heads are generally less numerous and larger than in the type. Professor Porter remarks that perhaps it is a good species, and also that it is suggestive of a hybrid between *Aster cordifolius* and *A. lævis*.

***Aster vimineus* Lam.**

This species and *A. diffusus* are not easily separated in some of their forms. Near Wells, Hamilton county, an Aster is common which has the narrow leaves of *A. vimineus*, but the hairy stem of *A. diffusus*.

***Aster Novi-Belgii* L.**

A form was collected at Northville in which the heads are unusually small, being about three lines long. They are about the size of the heads of *A. dumosus*.

At Lake Pleasant, a small form occurs in which the stem is one to two feet high, rarely branched and bearing from one to six flowers of usual size. At Wells is a form like this in all respects except that the stem and midvein of the leaves are hairy as in *A. puniceus*, to which, on this account the specimens have been referred, although the leaves are much more narrow than in ordinary forms of *A. puniceus*. It may be a question whether these should be considered as a narrow-leaved, few-flowered form of *A. puniceus*, or a hairy-stemmed, few-flowered form of *A. Novi-Belgii*. Both forms are apparently due to poor soil.

A form was collected near Wells, having the long linear leaves of variety *elodes*. They are four to four and a half inches long and not more than three lines wide.

***Erigeron strigosus* Muhl, var. *discoideus* Robbins.**

Roadsides and pastures. Alcove. C. L. Shear. Menands and Grafton. June and July.

This variety appears, at first sight, as if its rays had been closely eaten by insects.

***Lactuca leucophæa* Gr. var. *integrifolia* Gr.**

Along the railroad near Carrolton. September. Probably introduced from the west.

Polygonella articulata Meisn.

The plant is abundant in the sandy region between Albany and Schenectady. Its flowers are generally described as rose-colored or flesh-colored. They are sometimes white. Nearly all the plants in the region mentioned had white flowers the present season though in former seasons they have been generally rose-colored. What made the difference?

Populus balsamifera L.

Not rare in the Adirondack region. Near Elizabethtown, Essex county, are trees which appear to connect the species and the variety *candicans*. The leaves on the older branches are truncate or subcordate, but those on the young and thrifty branches and shoots from the roots are somewhat pointed at the base as in the type. The hairiness of the petiole is scarcely perceptible.

Clintonia umbellata Torr.

Fine flowering specimens were found near Carrollton. The leaves and scape are generally more or less pubescent. The umbel consists of six to eighteen small white flowers in a close erect cluster. Usually there is a bract just below the umbel. It grows in damp places either in pastures or in woods, and is in flower in June.

Erythronium Americanum Ker.

The bulbs of this plant sometimes emit long white leafless runners or offsets which come to the surface and after describing an irregular curve a few inches long, thrust the growing tip beneath the surface again. One bulb, dug from beneath the decaying leaves, had a leaf at one end and two offsets growing from the other.

Cyperus dentatus Torr.

Abundant on the sandy shore of Lake Pleasant. The spikes are changed to leafy tufts in almost every plant in this locality.

Eleocharis tuberculosa R. Br.

Erastina, Richmond county. November. *N. L. Britton.*

***Scirpus sylvaticus* L. var. *digynus* Boeckl.**

This sedge is apparently more common than has been supposed. Fine specimens were obtained near Wilton, Saratoga county. It maintains its distinguishing characters with great uniformity and is apparently a good and distinct species, easily recognizable at a glance and at once distinguishable from *S. sylvaticus* by its more densely clustered darker colored spikelets and by the purplish red sheaths that give a variegated appearance to the stem.

***Scirpus polyphyllus* Vahl. var. *macrostachyus* Boeckl.**

Lake Pleasant. August. This variety is not indicated in the Manual. It differs from the ordinary form of the species as represented in our flora, in being less leafy, in having much longer and darker colored spikelets, shorter achenes and longer, more slender and more sparsely and irregular barbed bristles. In general appearance it is quite unlike the leafy form with short-ovate, densely clustered yellow-brown spikelets. Occasionally a slender pedicel supporting a cluster of spikelets rises from the axil of the uppermost leaf.

***Eriophorum cyperinum* L. var. *laxum* W. & C.**

This variety was found at Lake Pleasant growing, in several instances, side by side with the typical form of the species. In addition to the distinguishing characters mentioned in the Manual it was found that when growing side by side and, so far as could be seen, subjected to exactly the same conditions, the variety reached maturity much earlier than the type. The woolly bristles of the mature plant are much paler and less dense in the mass. Sometimes the spikelets are all contracted into a single dense cluster one to two inches in diameter.

***Carex flava* L. var. *graminis* Bailey.**

Borders of lakes. Adirondack mountains. July. In our specimens the perigynia often have the beak deflexed as in the type, but in other respects the agreement with the description is good.

***Carex granularis* Muhl. var. *Haleana* Porter.**

Swamp near Meadowdale. June.

***Carex alopecoidea* Tuckerm.**

Plentiful about Lyons, Wayne county. June.

Muhlenbergia sylvatica T. & G.

A form with branches erect and with purplish densely flowered panicles occurs about Lake Pleasant and also at Wells.

Muhlenbergia sobolifera Trin.

This species is common enough in the lower part of the valley of the Hudson and on the Shawangunk mountains, but I have not observed it north of Saugerties.

Agrostis vulgaris With.

This grass grows freely in sandy soil. A very stout, rigid form with dark purple panicles was found growing in the loose sharp sand along the shore of Lake Pleasant.

Poa compressa L. var. sylvestris Torr.

This variety grows in open places as well as in woods. Fine specimens were found at Menands. It is easily recognized by its short open or spreading panicle.

Asplenium montanum Willd.

This fern was discovered to be an inhabitant of our State about twenty years ago. It was then found growing from crevices in the rocks about Lake Mohonk. This has remained its only known station in our State until the present season, in which I learn it has been found in the Catskill mountains, a station still farther to the north. Mr. Smiley informs me that it has been found in several new places about Lake Mohonk, that it appears to be increasing in abundance and that it is in no danger of extermination there, for it grows on the faces of the cliffs in places where it is wholly inaccessible to the most eager collector.

Collybia radicata Relh. var. furfuracea n. var.

Pileus and lamellæ as in the typical form; stem more slender, generally slightly tapering upward, *even, fufuraceus*, more or less brownish.

This form is much more common with us than the type. The variation is toward *C. longipes*, which has the stem villose rather than furfuraceous, and its pileus is dry and velvety, but in our plant it is glabrous and viscid or glutinous when moist. As in the type, the pileus is sometimes umbonate. There is a dwarf form which is quite common. In it the pileus is from six to sixteen lines broad and the stem proportionably slender. It might be designated as var. *pusilla*.

(E.)

NEW YORK SPECIES OF OMPHALIA.

Omphalia Fr.

Pileus thin, submembranaceous. Lamellæ decurrent. Stem cartilaginous, stuffed or hollow, somewhat thickened upwards. Spores white.

The species of *Omphalia* are generally small, the pileus rarely exceeding an inch or an inch and a half in diameter. It is usually umbilicate, a character which gives name to the genus, the word *Omphalia* being derived from the Greek, *ομφαλος* an umbilicus. It is sometimes either umbilicate or umbonate even in the same species. It is generally very thin, almost or quite membranous, and most often hygrophanous, so that generally it is striate or striatulate when moist. When mature, it assumes a funnel shape in a few species and then simulates some species of *Clitocybe*, but from these the species of *Omphalia* may be distinguished by their cartilaginous stem. From species of *Mycena* they are separated by their truly decurrent lamellæ.

They grow chiefly on decaying wood or other vegetable matter or on soil largely composed of such matter. They are fond of moisture and are to be sought in damp shaded places or in wet weather. Some occur in cold situations or at high altitudes, and others appear to be capable of enduring great variations in temperature. *O. Campanella*, one of our most common and most abundant species may be found throughout the season. It may even be found in sheltered cavities or on the under side of decayed prostrate trunks when the ground is covered with snow. On the other hand many species are quite rare, and some here described have been found but once in many years of exploration. Because of their small size the species are not regarded as important for the table and none are classed as edible.

The grouping of the species in the Friesian arrangement depends upon the primary form of the pileus, the character of its margin and the degree of proximity of the lamellæ to each other, but these characters have not appeared to me to be very sharp and satisfactory and in the following pages I have disregarded them.

O. subgrisea has been found to belong to another genus, and *O. tubæformis* is probably a large form of *Marasmius salignus*.

SYNOPSIS OF THE SPECIES.

| | |
|---|------------------|
| Lamellæ white, whitish or grayish..... | 1 |
| Lamellæ some other color..... | 14 |
| 1. Plant wholly white..... | 2 |
| 1. Plant not wholly white..... | 5 |
| 2. Pileus viscid when moist..... | 3 |
| 2. Pileus not viscid..... | 4 |
| 3. Stem adorned with minute gland-like protuberances, | |
| O. Rhododendri. | |
| 3. Stem without protuberances..... | O. Austini. |
| 4. Pileus somewhat funnel-form..... | O. scyphoides. |
| 4. Pileus convex..... | O. stellata. |
| 4. Pileus hemispherical..... | O. gracillima. |
| 5. Pileus yellowish or orange..... | 6 |
| 5. Pileus some other color..... | 8 |
| 6. Lamellæ arcuate..... | 7 |
| 6. Lamellæ subtriangular..... | O. umbellifera. |
| 7. Pileus 6 lines or more broad..... | O. fibuloides. |
| 7. Pileus less than 6 lines broad..... | O. Fibula. |
| 8. Pileus with the umbilicus darker..... | 9 |
| 8. Pileus uniformly colored..... | 10 |
| 9. Pileus 6 lines or more broad..... | O. Oculus. |
| 9. Pileus 2 to 4 lines broad..... | O. Swartzii. |
| 10. Pileus dotted with blackish points..... | O. Gerardiana. |
| 10. Pileus without blackish points..... | 11 |
| 11. Lamellæ uniformly colored..... | 12 |
| 11. Lamellæ with the edge darker..... | O. montana. |
| 12. Pileus less than 6 lines broad..... | O. corticola. |
| 12. Pileus more than 6 lines broad..... | 13 |
| 13. Pileus rugose on the disk..... | O. rugosidisca. |
| 13. Pileus even on the disk, glabrous..... | O. striipilea. |
| 13. Pileus silky or flocculose..... | O. Epichysium. |
| 14. Pileus viscid..... | O. lilacifolia. |
| 14. Pileus not viscid..... | 15 |
| 15. Pileus olive green..... | O. olivaria. |
| 15. Pileus some other color..... | 16 |
| 16. Stem bright yellow..... | O. chrysophylla. |
| 16. Stem pallid or rufescent..... | O. pyxidata. |
| 16. Stem date-brown..... | O. Campanella. |

Omphalia rugosidisca *Pk.*

RUGOSE-DISKED OMPHALIA.

(Report 26, p. 55.)

Pileus thin, broadly convex or nearly plane, umbilicate obtuse or slightly umbonate, sometimes slightly umbilicate, *rugose on the disk*, glabrous, hygrophanous, brown and striatulate when moist, paler when dry, the thin margin often wavy; lamellæ narrow, close, arcuate, decurrent, white, *emitting drops of a watery juice where cut or broken*; stem short, glabrous, hollow, often curved, whitish or colored like the pileus; spores elliptical, .00025 to .00028 in. long, .00016 broad.

Pileus 6 to 12 lines broad; stem about 1 inch long, .5 to 1 line thick.

Decaying prostrate trunks of coniferous trees, especially hemlock. Adirondack mountains, Otsego, Ulster, Albany and Rensselaer counties. July to September.

The species is remarkable because of the watery juice which oozes in drops from the lamellæ of the fresh plant where cut or broken.

Omphalia lilacifolia *Pk.*

LILAC-LEAVED OMPHALIA.

(Agaricus lilacinus Rep. 24, p. 63. A. lilacifolius Rep. 29, p. 66.)

Pileus convex, deeply umbilicate, glabrous, *viscid*, hygrophanous, dingy-yellow with a slight greenish tinge and striatulate when moist, bright sulphur-yellow when dry; lamellæ close, narrow, arcuate, decurrent, *pale lilac*; stem equal, glabrous, hollow, *viscid*, yellowish with a *pale lilac-colored mycelium at the base*; spores subelliptical, .0002 to .00025 in. long, about .00012 broad.

Pileus 6 to 12 lines broad; stem 6 to 12 lines long, .5 to 1 line thick.

Decaying prostrate trunks of hemlock. Oneida and Albany counties. September.

This is a very distinct species, remarkable for its viscid pileus and stem and for the peculiar hue of the lamellæ and mycelium.

Omphalia Oculus *Pk.*

EYE-SPOT OMPHALIA.

(Report 23, p. 84.)

Pileus convex, umbilicate, often with a small umbo or papilla in the umbilicus, *minutely squamulose*, dingy-white, *the umbilicus blackish-brown*; lamellæ white, narrow, close, subarcuate; stem

hollow, minutely squamulose or furfuraceous, easily splitting, often curved, whitish; spores subglobose, .00016 to .0002 in. in diameter.

Pileus 6 to 12 lines broad; stem 1 to 1.5 in. long, 1 to 2 lines thick.

Prostrate trunks of hemlock in woods. Adirondack mountains. August.

The dark colored umbilicus is a noticeable feature. The plant has not been found since its discovery in 1869. The species is evidently rare. It is apparently closely related to *Collybia abundans*, from which it is distinguished by its more decided darker umbilicus and squamulose pileus.

***Omphalia olivaria* Pk.**

OLIVE-GREEN OMPHALIA.

(Report 25, p. 76.)

Pileus convex, umbilicate, glabrous, *olive-green*; lamellæ subdistant, arcuate-decurrent, *pale-yellow*; stem equal, short, glabrous, hollow, colored like the pileus; spores subglobose or broadly elliptical, .00025 to .00028 in. long, about .0002 in. broad.

Pileus about 1 in. broad; stem about 1 in. long, 1 line thick.

Burnt ground under balsam fir trees. North Elba, Essex county. July.

This plant was discovered in 1871. It has not since been found.

***Omphalia chrysophylla* Fr.**

GOLDEN-LEAVED OMPHALIA.

(Hym. Europ. p. 156. Syl. Fung. Vol. V, p. 312.)

Pileus convex or nearly plane, flocculose, umbilicate, hygrophanous, yellowish-brown when moist, paler when dry, the spreading margin sometimes reflexed; lamellæ broad, distinct, distant, strongly decurrent, *bright-yellow*; stem equal, tough, hollow, sometimes curved, even, glabrous, villous at the base, *yellow*; spores oblong-elliptical, .0004 to .00045 in. long, .00016 to .0002 broad.

Pileus about 1 in. broad; stem 1 to 1.5 in. long, 1 to 2 lines thick.

Decaying wood of coniferous trees. Adirondack mountains, Schoharie and Rensselaer counties. August and September.

Var. *chrysea*. (*Agaricus chryseus*, Rep. 23, p. 85.)

Whole plant yellow, lamellæ rather narrow.

This differs from the true *O. chrysophylla* so slightly that it seems best to regard it as a mere variety of that species. The pileus varies in depth of coloring and the spores in the American plant, from which the dimensions here given were taken, are somewhat longer than the dimensions ascribed to those of the European plant. This fungus is not common.

***Omphalia pyxidata* Bull.**

CUP-SHAPED OMPHALIA.

(Hym. Europ. p. 157. Syl. Fung. Vol. V, p. 313.)

Pileus at first convex or nearly plane and umbilicate, then funnel-form, glabrous, hygrophanous, brick-red or reddish-brown when moist and wholly radiate-striate, or on the margin only, pale when dry and flocculose or slightly silky; lamellæ narrow, subdistant, decurrent, tinged with flesh-color, then *yellowish*; stem equal, tough, glabrous, stuffed or hollow, *pallid or reddish*; spores subelliptical, .00025 to .0003 in. long, .00016 to .0002 broad.

Pileus 6 to 12 lines broad; stem about 1 in. long, 1 line thick.

Grassy or mossy ground in pastures. Lewis county. September.

This is evidently a rare species with us, as it has not been observed since its discovery here in 1870.

***Omphalia stripilea* Fr.**

STRIATE-CAPPED OMPHALIA.

(Hym. Europ. p. 157. Syl. Fung. vol. V, p. 314)

Pileus membranous, convex or plane, umbilicate, never funnel-form, *glabrous*, hygrophanous, livid brown and beautifully *striate when moist*, even and paler when dry; lamellæ not crowded, slightly decurrent, whitish; stem equal, rather firm and tough, glabrous, hollow, often flexuous, *brownish*; spores nearly or quite globose, .00025 to .00028 in. broad.

Pileus 6 to 12 lines broad; stem 1 to 1.5 in. long, about 1 line broad.

In groves of spruce and balsam fir. Essex county. September.

Omphalia Epichysium Pers.

OVERSPREADING OMPHALIA.

(Hym. Europ. p. 158. Syl. Fung. vol. V, p. 314)

Pileus membranous, soft, nearly plane, umbilicate, hygrophanous, sooty-gray and striate when moist, paler when dry and *silky or flocculose*; lamellæ narrow, subdistant, slightly decurrent, whitish or cinereous; stem equal, somewhat hollow, glabrous, cinereous; spores elliptical, .0003 in. long, .00016 broad.

Pileus 6 to 12 lines broad; stem about 1 inch long, 1 line thick.

Decaying wood and dead trunks of trees. Adirondack mountains. August.

Omphalia Gerardiana Pk.

GERARD'S OMPHALIA.

(Agaricus Gerardianus. Rep. 26, p. 54)

Pileus thin, nearly plane or soon funnel-form, generally umbilicate, fragile, *dotted with minute blackish points*, hygrophanous, brown or grayish-brown and striatulate when moist, paler when dry; lamellæ narrow, subdistant, decurrent, sometimes forked, whitish or cinereous; stem long or short, glabrous, stuffed or hollow, colored like the pileus; spores oblong or ovate-oblong, .0003 to .00045 in. long, about .00016 broad.

Pileus 8 to 12 lines broad; stem 1 to 2.5 in. long, .5 to 1 line thick.

Growing in Sphagnum. Rensselaer, Ulster and Seneca counties. June.

This fungus was formerly referred to the subgenus Clitocybe, but later observations indicate a closer relationship to Omphalia. It is closely related to such species of Omphalia as *O. affricata*, *O. telmatiaea*, *O. sphagnicola* and *O. philonotis*. From all these it differs in the peculiar adornment of the pileus.

Omphalia montana Pk.

MOUNTAIN OMPHALIA.

(Report 27, p. 94.)

Pileus thin, umbilicate, glabrous, blackish-brown; lamellæ distant, decurrent, whitish, *darker on the edge*, stem equal, glabrous, colored like the pileus; spores broadly elliptical, about .0003 in. long.

Pileus 6 to 8 lines broad; stem about 1 inch long, 1 line thick.

Thin soil covering rocks. Mount Marcy. August. Very rare. Not found since 1873. Remarkable for the discolored edge of the lamellæ.

***Omphalia umbellifera* L.**

UMBEL-BEARING OMPHALIA.

(Hym. Europ. p. 161. Syl. Fung. vol. V, p. 321.)

Pileus convex or plane, somewhat obconic, hygrophanous, radiate-striate when moist, whitish or pale-yellow; lamellæ *broad, distant, somewhat triangular*, white; stem short, stuffed, becoming hollow; spores broadly elliptical, .0003 to .0004 in. long, .0002 to .00025 broad.

Pileus 4 to 8 lines broad; stem 6 to 10 lines long, .5 line thick, ground or decaying wood.

Var. *scabriuscula*. (*Agaricus scabriusculus* Rep. 23, p. 85.)

Plant commonly larger, pileus flocculose-pulverulent, yellow; lamellæ white or pale-yellow, the interspaces venose; stem hairy-squamulose.

Decaying wood. Adirondack mountains.

This is a very variable species. It occurs from June to September, and grows on ground largely composed of decomposed vegetable matter or on much decayed wood. In this State it seems to be limited in its range to the Adirondack region and there it ascends to the tops of the highest peaks. Its pileus and broad lamellæ together have an obconic shape. It is often irregular or misshapen. The stem may be either glabrous, pruinose or hairy-squamulose. Sometimes it is pubescent or villose at the base only. The pileus is either glabrous or silky or flocculose-pulverulent.

***Omphalia Campanella* Batsch.**

BELL-SHAPED OMPHALIA.

(Hym. Europ. p. 162. Syl. Fung. vol. V, p. 327.)

Pileus thin, rather tough, hemispherical or convex, glabrous, umbilicate, hygrophanous, yellow-ferruginous and striatulate when moist, paler when dry; lamellæ moderately close, arcuate, decurrent, yellowish, the interspaces venose; stem firm, rigid, hollow. *brown*, often paler at the top, *tawny-strigose at the base*;

spores elliptical, .00024 to .00028 in. long, .00012 to .00016 broad. Pileus 4 to 8 lines broad; stem about 1 in. long, scarcely 1 line thick.

Much decayed wood of coniferous trees. Very common. May to November.

This pretty little species occurs everywhere in woods and shaded places where there are prostrate, much decayed trunks of hemlock, spruce and pine. It makes its appearance as soon as the weather is moderately warm in spring, and successive crops develop till all growth is stopped by the return of the cold weather of winter. Rarely it grows on ground well filled with decaying vegetable matter. It usually grows in large flocks or dense clusters but sometimes is more scattered. It is the most frequent and most abundant of our species of *Omphalia* and is easily recognized by its yellowish-red pileus, dark-brown stem and the little ball or tuft of tawny-colored coarse hairs at the base of the stem. The pileus varies some in the intensity of its color but all the hues of the moist plant appear to be mixtures of yellow and dull red in different proportions. In the dry plant, the yellow predominates. The mycelium of this species is regarded as destructive to the wood of coniferous trees.

Omphalia fibuloides *Pk.*

BUTTON-LIKE *OMPHALIA*.

(Report 24, p. 63.)

Pileus thin, convex, deeply umblicate, glabrous, hygrophanous, dull orange and striatulate when moist, paler when dry; lamellæ rather close, arcuate strongly decurrent, white, the interspaces venose; stem equal, glabrous, hollow, colored nearly like the pileus; spores elliptical, .0003 in. long, .0002 broad.

Pileus 6 to 10 lines broad; stem 1 to 2 in. long, scarcely 1 line thick.

Burnt, mossy ground. Lewis and Sullivan counties. September.

It is closely related to *Omphalia Fibula*, which it resembles in color, but from which it may easily be distinguished by its much larger size, more robust habit and venose interspaces. Its spores also are larger than in that species.

Omphalia Fibula Bull.

BUTTON OMPHALIA.

(Hym. Europ. p. 164. Syl. Fung. vol. V, p. 331.)

Pileus membranous, commonly convex or hemispherical and umbilicate, striatulate when moist and varying in color from pale-yellow to orange, even and paler when dry; lamellæ *distant*, arcuate, strongly decurrent, white; stem slender, commonly long in proportion to the breadth of the pileus, colored like or a little paler than the pileus; spores *narrowly elliptical*, minute, .00016 in. long, .0008 broad.

Pileus 2 to 5 lines broad; stem 1 to 2 in. long, scarcely .5 line thick.

Mossy ground and prostrate mossy trunks of trees in woods or open places. Common. April to November.

Var. *conica*. Pileus conical, not umbilicate, sometimes papillate. Fulton county.

This is a very small species and of frequent occurrence in damp mossy places, but rarely abundant. Its pileus varies in color from almost white to bright orange. Large forms approach the preceding species in appearance.

Omphalia Swartzii.*Agaricus Fibula* var. *Swartzii* Fr.

SWARTZ'S OMPHALIA.

(Hym. Europ. p. 164. Syl. Fung. vol. V, p. 331.)

Pileus rather firm, even, whitish, *disk brownish*; stem whitish, somewhat *violaceous at the top*. In other respects like the preceding species.

Although this plant scarcely differs from *O. Fibula* except in color, and is regarded by almost all mycologists as a mere variety of it, yet it is so peculiar and so constant in its color and so easily recognized that it seems best to separate it as a species.

Omphalia corticola Pk.

BARK-INHABITING OMPHALIA.

(Report 44, p. 18)

Pileus submembranous, convex, then expanded and umbilicate, distantly radiate-striate, *whitish or pale-cinereous*; lamellæ narrow, distant, *at first arcuate and adnate*, then truly decurrent, white;

stem short, curved, subpruinose or sprinkled with mealy particles, at first whitish with a brown base, then brown with a whitish top; spores elliptical, .0003 in. long, .00016 broad, generally containing a single large nucleus.

Pileus 2 to 4 lines broad; stem 4 to 6 lines long.

Bark of oak trees. Cattaraugus county. September.

This species is distinguished from *Mycena corticola* by its paler pileus, more narrow and, at length, decurrent lamellæ and elliptical spores.

***Omphalia gracillima* Weim.**

SLENDER OMPHALIA.

(Hym. Europ. p. 165. Syl. Fung. vol. V, p. 332.)

Pileus membranaceous, *hemispherical*, papillate or umbilicate, somewhat flocculose when young, becoming glabrous, sulcate on the margin, white; lamellæ thin, somewhat distant, decurrent, the alternate ones shorter, white; stem filiform, white, inserted by a floccose base; spores elliptical, .00024 in. long .0001 : broad.

Pileus 2 to 3 lines broad; stem 4 to 8 lines long.

Dead twigs and fallen leaves in wet places. Rensselaer county. September.

A very small delicate species, the whole plant pure white.

***Omphalia stellata* Fr.**

STELLATE OMPHALIA.

(Hym. Europ. p. 162. Syl. Fung. vol. V, p. 325.)

Pileus membranous, *convex, umbilicate*, glabrous, striate, diaphanous, white; lamellæ broad, very distant, thin, decurrent, white; stem filiform, fragile, equal, glabrous, white, radiate-floccose at the base; spores subglobose or broadly elliptical, .00024 in. long, .0002 broad.

Pileus 2 to 4 lines broad; stem 6 to 10 lines long.

Decaying prostrate trunks of trees in woods. Albany county. August.

***Omphalia Rhododendri* Pk.**

RHODODENDRON OMPHALIA.

(Report 27, p. 94.)

Pileus convex, umbilicate, glabrous, slightly viscid when moist, striate on the margin, white; lamellæ subdistant, arcuate, decurrent, white, beaded on the edge with gland-like protuber-

ances; stem slender, *roughened with minute white gland-like protuberances*, white; spores oblong or narrowly elliptical, .0003 in. long, .00012 broad.

Pileus 2 to 3 lines broad; stem 6 to 8 lines long.

Dead stems of great laurel, *Rhododendron maximum*. Sullivan county. September.

Omphalia Austini *Pk.*

AUSTIN'S OMPHALIA.

(Report 28, p. 48.)

Pileus rather tenacious, convex or hemispherical, glabrous, striate, deeply umblicate, sometimes perforate, *viscid when moist*, white; lamellæ subarcuate, distant, decurrent, white; stem equal, hollow, *even*, glabrous, villose at the base, white; spores elliptical, .0003 in. long, .0002 broad.

Pileus 3 to 6 lines broad; stem 1 to 1.5 in. long, .5 line thick.

Decaying wood of spruce. Saratoga, Hamilton, Fulton and Essex counties. July and August.

Rarely the pileus has a slight smoky or grayish tint.

Omphalia scyphoides *Fr.*

CUP-LIKE OMPHALIA.

(Hym. Europ. p. 156. Syl. Fung. vol. V, p. 310.)

Pileus submembranous, plane and umbilicate or funnel-form, often irregular or somewhat eccentric, even, silky, white; lamellæ *narrow, close*, decurrent, white; stem short, stuffed, subvillose, white; spores elliptical, .00024 inches long, .00016 to .0002 broad.

Pileus 2 to 4 lines broad; stem 4 to 8 lines long.

Decaying wood, leaves, etc., Saratoga county. July and August.

In our specimens there is no villosity on the stem except at the base.

[FROM THE 46TH REPORT OF THE NEW YORK STATE MUSEUM OF NATURAL HISTORY.]

ANNUAL REPORT
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STATE BOTANIST
OF THE
STATE OF NEW YORK. 1892

Made to the Regents of the University, Pursuant to
Chapter 355 of the Laws of 1883.

BY CHARLES H. PECK.

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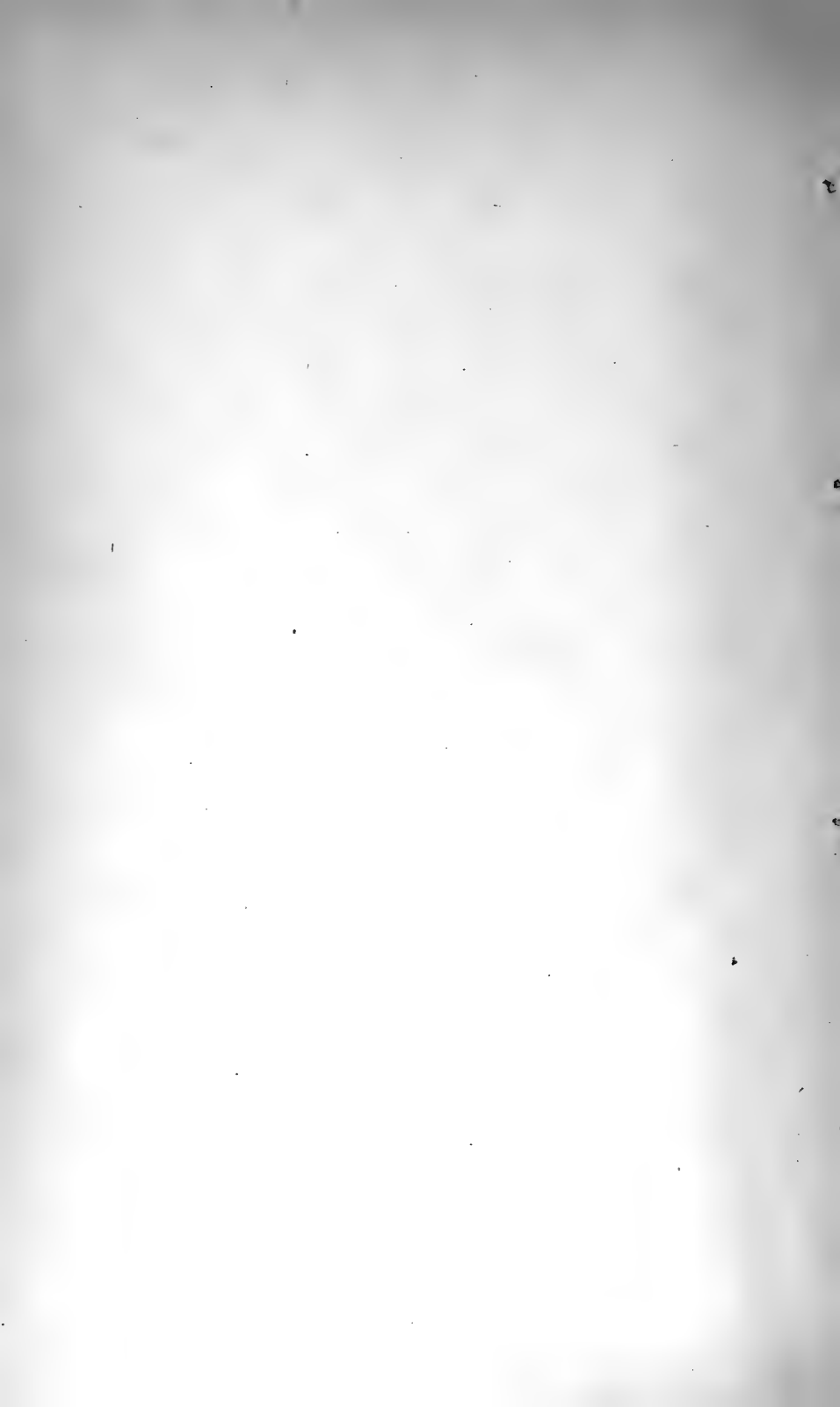
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No. 41.

IN SENATE,

JANUARY, 1893.

ANNUAL REPORT

OF THE

STATE BOTANIST.

OFFICE OF THE STATE BOTANIST, }
ALBANY, *January*, 1893. }

*To the Honorable the Regents of the University of the State of
New York:*

I have the honor to present to you my annual report for
the year 1892.

Very respectfully.

CHARLES H. PECK.



REPORT.

To the Regents of the University of the State of New York:

GENTLEMEN.—I have the honor of communicating to you the following report of the work of the Botanist for the year 1892.

Plant specimens have been collected in the counties of Albany, Essex, Hamilton, Herkimer, Jefferson, Oneida, Queens, Rensselaer, Saratoga, Suffolk, Ulster, Washington and Warren.

Specimens have been contributed by correspondents who collected them in the counties of Albany, Chenango, Essex, Onondaga, Rensselaer, Richmond, Queens, Saratoga, Schenectady, Suffolk and Washington.

The whole number of species represented by the specimens added to the State Herbarium during the year is 338. Of these 24 are represented by contributed specimens, 314 by specimens collected by the Botanist. Of the species new to the Herbarium, 81 in all, nine belong to the contributed specimens and 72 to those collected by the Botanist. Of the 81 species, there are 30 of which I find no satisfactory description, and they are, therefore, described as new. These are all fungi, two of which belong to the contributed specimens, 28 to the collected. A list of the species of which specimens have been added to the Herbarium is marked A.

Specimens of plants have been contributed by twenty-three persons. Among these contributions are many specimens of extra-limital species not included in the foregoing enumeration. A list of the names of the contributors and of their respective contributions is marked B.

The record of species not before reported, together with the localities where the specimens were respectively collected, their habitats, remarks concerning them and the descriptions of new species is marked C.

To this is added a record of a few extra-limital species received from correspondents and considered new or worthy of special notice. These descriptions and remarks follow the letter D.

Notes and observations upon species previously reported, together with descriptions of new or interesting forms and varieties of them, are marked E. To this record I have added descriptions of our New York species of *Pluteolus* and *Galera*. They are marked F.

That there is a growing demand for a better knowledge of our fungi, especially of those of economic importance, is plainly evident. The frequent inquiries received at the office of the Botanist concerning them, and the numerous specimens sent to him for identification, are an evidence of this fact. The use of the edible fleshy species for food is rapidly on the increase in this country, and yet very many who would gladly avail themselves of the agreeable and nutritious diet afforded by our numerous esculent species are debarred from doing so by a lack of the knowledge necessary for a proper discrimination between the good and the bad or worthless. With this knowledge the fear of being poisoned by the bad would no longer prevent the use of the good. With it many whose circumstances are such as to make it difficult or impossible to procure an adequate supply of animal food might often obtain a very good substitute for it by the slight labor of gathering it in the fields and woods. European works on this subject are not readily available because of their high price and are not generally satisfactory because the species in this country are not wholly the same as in that; or if the price is not great then the deficiency in the number and character of the illustrations is likely to be an objection. In view of these facts it was very gratifying to me to receive from your office directions to prepare for publication full-size colored plates of the edible and poisonous mushrooms of the State, together with brief descriptions and notes. In accordance with these directions thirty-six quarto plates, on which are represented fifty-nine edible species in natural size and color, have been prepared. Also, four plates representing in like manner three poisonous species. In all cases where it is important these plates show both the young and the mature plant and the principal variations in color and shape. Vertical sections of the plants are also depicted in order to show the internal structure and color, to which have been added, for the advantage of students of mycology and others who may be fortunate enough

to possess a compound microscope, illustrations of the fruit or spores of each species. These are uniformly magnified 400 diameters.

The manuscript designed to accompany the plates consists of 19 pages of legal note, 123 pages of descriptions and remarks, explanations of the plates and two pages of index.

With these plates and their accompanying explanations, descriptions and remarks, it seems to me to be an easy matter for any one of ordinary intelligence, even though without any experience in such things, to recognize the species illustrated by them. Of the 59 edible species illustrated, 40 at least have been used as food by myself and thus proved to my own satisfaction to be good and safe. Nearly all of the remainder have been proved by friends or correspondents in whom I have full confidence, and the few untried ones are such as are generally recommended as edible by European works on this subject, and such as I would have no hesitation in eating if opportunity should be afforded. A few of the species are such as are not represented in European works or have not been classed as edible in them, but in all these cases they have been proved by actual trial to be worthy of a place among our edible species.

There yet remains in our flora a goodly number of reputed edible species which I have not tried for lack of opportunity, but it is my purpose to test them as fast as opportunity is given. Eight species not included in the illustrations have been tried the past season. It is my purpose to continue the illustration of these, and others as fast as they have been proved, until all our esculent species have been thus represented. The more I experiment in this direction the more firmly I am convinced that the number of really poisonous or dangerous species of mushrooms is very small. Probably there is not a greater percentage of such species among the fleshy fungi than there is of really dangerous or poisonous species among flowering plants. But there are many fungi which, though harmless, are not to be classed as edible, because of their toughness, insipidity, unpleasant flavor or smallness of size.

The plan of putting the illustrations of our edible mushrooms upon charts to be suspended upon the walls of our institutions of

learning seems to me to be a good one. In this way the students, by seeing them from day to day, would become familiar with the general appearance of the species, and would recognize them at once if they should see the plants themselves growing in their native places. There would probably be kindled in the minds of some, at least, an earnest desire to know more of these interesting and useful plants, and they would thus be led to acquire a more extended knowledge of them. If the number of our esculent species should be thought too great for such chart representation, any desired number of the more common and important species might be selected for this purpose. If the outlay necessary to place charts in all the district schools should seem too great, they might be placed at first in the high schools and academies by way of experiment.

The vegetation that grows so profusely in the shallow water at the head of Lake Champlain and along its shores and dykes seemed to me to be worthy of examination. This was given early in July. Much of the woody growth consists of willows, of which the most abundant are the black willow, *Salix nigra*, the shining willow, *S. lucida*, the glaucous willow, *S. discolor*, the heart-leaved willow, *S. cordata*, and the brittle willow, *S. fragilis*. All except the last are indigenous species. The green ash, *Fraxinus viridis*, the silver maple, *Acer dasycarpum* and the red maple *A. rubrum*, are also plentiful. Although these are moisture-loving plants, too much water seems to be an injury rather than a benefit to some of them at least. Their roots and the soil in which they grow are submerged much of the time, yet the leaves of many of them are unusually small. This was especially noticeable in the black willow, the shining willow and the heart-leaved willow. Their peculiar habitat seems also to retard development. The reddish-brown color of the young leaves of the heart-leaved willow and the maples was conspicuous even in July. The spiked loosestrife, *Lythrum Salicaria*, an introduced plant which is abundant in the lower part of the Hudson river valley, was growing freely in the margin of the lake. This is a new station for it and the most northern one in the State, though it is said to grow about the quarantine grounds of Quebec. The great bullrush, *Scirpus validus*, the river club-rush, *Scirpus fluviatilis*, and the sweet flag, *Acorus Calamus*,

occupy much of the shallow water space, sometimes growing intermingled and again each maintaining exclusive possession over large areas. Such plants as the water persicaria, *Polygonum amphibium*, in which the leaves were often two inches wide and four or five inches long, and the swamp dock, *Rumex verticillatus*, were apparently intent on obtaining as much food as possible from their watery habitat, for they had emitted a dense whorl of rootlets from each of the lower joints of the submerged stem.

Our native wild roses and wild asters have been the source of considerable perplexity to botanists by reason of the variability of the species. Some special attention has been given to these plants the past summer and autumn. Our native roses are easily divided into two groups, one of which is easily recognized by the naked pedicels and receptacles and by the persistent lobes of the calyx; the other, by the glandular pedicles and receptacles and the deciduous lobes of the calyx. The bland or early wild rose, *Rosa blanda*, has hitherto been considered our only representative of the first group, but two roses have been found on the mountains and along the highways in the eastern part of Essex county which correspond to the description of the two western roses, *R. Engelmanni* and *R. Sayi*, which also belong to this group. These have the stems, and usually the branches also, densely clothed with prickles intermingled with some straight slender spines, a feature by which they may at a glance be distinguished from ordinary forms of the bland rose. They scarcely differ from each other except in the form of the fruit which is globose in the specimens referred to Say's rose, and oblong elliptical or ovate in those referred to Engelmann's rose. The bland rose which usually has stems entirely destitute of prickles or spines, sometimes occurs with prickles toward the base of the stems, but I have seen no specimens with spines.

The Carolinian or swamp rose, *Rosa Carolina*, so far as my observation goes, is most satisfactorily recognized by the teeth on the margin of the leaflets. These are decidedly smaller and finer than those of the leaflets of the other species of its group. The stem is sometimes furnished with prickles, sometimes destitute of them. This is the only species of wild rose that I have found in the heart of the Adirondack wilderness. It flowers

there about one month later than on Long Island. Of the two remaining species of this group, the shining rose, *Rosa lucida*, and the dwarf rose, *R. humilis*, the extreme forms are easily recognized; the former by its tall stout stem, stout spines and dark-green shining leaves; the latter, by its low slender growth, straight, slender spines, thinner leaves and fewer flowers; but all manner of intermediate forms occur which are very perplexing and which seem to connect the two.

Among our wild asters several interesting forms and varieties have been collected. Some of the most notable of these variations have been found to occur in the prenanthoid aster, *Aster prenanthoides*, a species which seems to have been regarded as quite uniform and fixed in its characters, for only a single variety is mentioned in the North American Flora. In the Catskill mountain region it varies excessively in the size and shape of the leaves, in the number and size of the heads and in their arrangement in panicles and corymbs, in the color of the rays and in the number, length and direction of the branches. The extreme forms, if observed separately, would scarcely be thought to belong to the same species, but they are so connected by intermediate forms that it is difficult to separate them. A more extended account of these variations will be found in another part of this Report.

Scarcely less remarkable are the variations shown by the low or dwarf goldenrod, *Solidago humilis*. This species, which I have found in the Adirondack region only, occurs on the top of the low rocky ridge on the north shore of Third lake, one of the Fulton chain of lakes. This ridge is known as Bald mountain. Its summit is long and narrow and nearly destitute of trees. Here and there the rock is covered with limited areas of thin soil that has accumulated in the depressions and shallow cavities and crevices. In this the dwarf goldenrod grows. The elevation, temperature, degree of exposure, moisture and character of the soil are all so uniform over the whole summit that much variation in the character of any plant that might grow there would scarcely be expected. Yet this goldenrod, in this limited area and apparently exposed to the same external conditions, exhibits here four well-marked and quite distinct forms. It certainly looks as if variation does not always depend upon external circumstances.

Some attention has been given to the collection of specimens designed to add to the popular interest in the contemplated exhibit of representative specimens of the Herbarium at the World's Fair. But no official notice of the assignment of space for such an exhibit has yet been received by me, and I have not thought it proper to devote much time to preparation for this exhibit till such notice shall have been received. Inasmuch as the Herbarium is especially rich in specimens of fungi, I have thought it most appropriate to make an exhibit of these plants, and chiefly of those having an economical importance, either by reason of their useful or their noxious character.

Respectfully submitted.

CHAS. H. PECK.

ALBANY, *December* 12, 1892.

(A.)

PLANTS ADDED TO THE HERBARIUM.

New to the Herbarium.

| | |
|---|--|
| Papaver somniferum <i>L.</i> | Corticium Kalmiæ <i>Pk.</i> |
| Prunus Cerasus <i>L.</i> | Exobasidium Vaccinii <i>Wor.</i> |
| P. domestica <i>L.</i> | Tylostoma mammosum <i>Fr.</i> |
| Rosa humilis <i>Marsh.</i> | T. campestre <i>Morg.</i> |
| R. Sayi <i>Schw.</i> | Lycoperdon hirtum <i>Mart.</i> |
| R. Engelmanni <i>Wats.</i> | L. asterospermum <i>D. & M.</i> |
| Rubus setosus <i>Bigel.</i> | L. perlatum <i>Pers.</i> |
| R. Millspaughii <i>Britton.</i> | L. Curtisii <i>Berk.</i> |
| Galium Kamschaticum <i>Stell.</i> | Didymium proximum <i>B. & C.</i> |
| Oenothera Oakesiana <i>Robbins.</i> | Physarum contextum <i>Rost.</i> |
| Chrysanthemum segetum <i>L.</i> | Peronospora Linariæ <i>Fekl.</i> |
| Artemisia serrata <i>Nutt.</i> | Phyllosticta Dioscoreæ <i>Cke.</i> |
| Lactuca hirsuta <i>Muhl.</i> | Phoma vulgaris <i>Sacc.</i> |
| Blephilia ciliata <i>Raf.</i> | Macrophoma versabilis <i>Pk.</i> |
| Polygonum cuspidatum <i>S. & Z.</i> | Sphæronema Loniceræ <i>Pk.</i> |
| Quercus Brittoni <i>Davis.</i> | Septoria Trailiana <i>Sacc.</i> |
| Scirpus Peckii <i>Britton.</i> | Micropera Nemopanthis <i>Pk.</i> |
| Panicum nitidum <i>Max.</i> | Gloeosporium Platani <i>Oud.</i> |
| P. laxiflorum <i>Lam.</i> | G. phomoides <i>Sacc.</i> |
| Zygodon conoideus <i>Dicks.</i> | G. fructigenum <i>Berk.</i> |
| Tricholoma serratifolium <i>Pk.</i> | Cylindrospodium Acori <i>Pk.</i> |
| T. submaculatum <i>Pk.</i> | Urocystis Walsteinii <i>Pk.</i> |
| Clitocybe albidula <i>Pk.</i> | Cryptospora Gœppertiana <i>Kuhn.</i> |
| C. revoluta <i>Pk.</i> | Æcidium Lupini <i>Pk.</i> |
| Collybia ochroleuca <i>Pk.</i> | Uredo Chimaphilæ <i>Pk.</i> |
| Mycena rugosa <i>Fr.</i> | Cylindrium griseum <i>Bon.</i> |
| M. hemisphærica <i>Pk.</i> | C. elongatum <i>Bon.</i> |
| Entoloma nidorosum <i>Fr.</i> | Verticillium sphærophilum <i>Pk.</i> |
| Tubaria canescens <i>Pk.</i> | Periconia tenuissima <i>Pk.</i> |
| Agaricus subrufescens <i>Pk.</i> | Zygodesmus fulvus <i>Sacc.</i> |
| Hypholoma aggregatum <i>Pk.</i> | Cladosporium Zeæ <i>Pk.</i> |
| Deconica bryophila <i>Pk.</i> | Napicladium gramineum <i>Pk.</i> |
| D. bulbosa <i>Pk.</i> | Stilbum madidum <i>Pk.</i> |
| Coprinus arenatus <i>Pk.</i> | Coremium glaucum <i>Fr.</i> |
| Hygrophorus metapodius <i>Fr.</i> | Fusarium viticolum <i>Thum.</i> |
| Russula adusta <i>Fr.</i> | Lachnella citrina <i>Pk.</i> |
| Merulius Corium <i>Fr.</i> | Anthostoma Ontariense <i>E. & E.</i> |
| M. serpens <i>Tode.</i> | Stigmatea Geranii <i>Fr.</i> |
| Odontia lateritia <i>B. & C.</i> | Massariella Xanthoxyli <i>Pk.</i> |
| Thelephora subcitracea <i>Pk.</i> | Ophiobolus subolivaceus <i>Pk.</i> |

Not new to the Herbarium.

| | |
|-----------------------------------|---------------------------|
| Anemone Virginiana <i>L.</i> | Magnolia glauca <i>L.</i> |
| A. nemorosa <i>L.</i> | M. acuminata <i>L.</i> |
| Thalictrum polygamum <i>Muhl.</i> | Nuphar advena <i>Ait.</i> |

- Nuphar Kalmianum Ait.*
Arabis hirsuta Scop.
A. perfoliata Lam.
Nasturtium palustre DC.
Barbarea vulgaris R. Br.
Lepidium intermedium Gr.
Hudsonia ericoides L.
Viola sagittata Ait.
Arenaria serpyllifolia L.
A. Caroliniana Walt.
Buda rubra Dumont.
Hypericum Ascyron L.
Linum striatum Walt.
L. Virginianum L.
Erodium cicutarium L'Her.
Geranium Carolinianum L.
Floerkea proserpinacoides Willd.
Vitis æstivalis Mx.
Polygala polygama Walt.
P. senega L.
P. sanguinea L.
Lespedeza violacea Pers.
Vicia sativa L.
V. tetrasperma L.
V. Cracca L.
V. Caroliniana Walt.
Cassia Marilandica L.
Prunus maritima Wang.
P. Persica B. & H.
Rubus neglectus Pk.
R. villosus Ait.
R. Canadensis L.
Rosa blanda Ait.
R. lucida Ehrh.
Amelanchier Canadensis T. & G.
Sedum acre L.
Drosera filiformis Raf.
Myriophyllum ambiguum Nutt.
Lythrum Salicaria L.
Epilobium lineare Muhl.
E. adenocaulon Haussk.
Enothera fruticosa L.
Opuntia vulgaris Mill.
Aralia trifolia D. & P.
Viburnum cassinoides L.
Cornus florida L.
Galium pilosum Ait.
G. circæzans Mx.
G. boreale L.
G. trifidum L.
Galium triflorum Mx.
Solidago bicolor L.
S. humilis Pursh.
S. uliginosa Nutt.
S. rugosa Mill.
S. juncea Ait.
S. Canadensis L.
S. nemoralis Ait.
S. lanceolata L.
Sericocarpus conyzoides Nees.
S. solidagineus Nees.
Aster Herveyi Gr.
A. corymbosus Ait.
A. patens Ait.
A. undulatus L.
A. cordifolius L.
A. lævis L.
A. diffusus Ait.
A. paniculatus Lam.
A. prenanthoides Muhl.
A. puniceus L.
Erigeron annuus Pers.
E. strigosus Muhl.
Gnaphalium purpureum L.
Artemisia caudata Mx.
Senecio aureus L.
Cnicus horridulus Pursh.
C. pumilus Torr.
Hieracium præaltum Vill.
H. venosum L.
Sonchus asper Vill.
Lobelia spicata Lam.
Specularia perfoliata A. DC.
Campanula rapunculoides L.
Rhododendron viscosum Torr.
Chimaphila maculata Pursh.
Primula Mjstassinica Mx.
Lysimachia stricta Ait.
Anagallis arvensis L.
Fraxinus viridis Mx.
Asclepias incarnata L.
A. verticillata L.
Hydrophyllum Canadense L.
Verbascum Thapsus L.
Linaria vulgaris Mill.
Mimulus moschatus Dougl.
Limosella aquatica L.
Veronica peregrina L.
Conopholis Americana Wallr.
Lycopus Virginicus L.

- Scutellaria lateriflora L.*
S. galericulata L.
Plantago major L.
P. Rugelii Dec.
P. lanceolata L.
P. Patagonica Jacq.
Chenopodium capitatum Wats.
C. Bonus-Henricus L.
Rumex Patientia L.
R. verticillatus L.
R. obtusifolius L.
R. Acetosella L.
Polygonum lapathifolium L.
P. Pennsylvanicum L.
P. amphibium L.
P. Persicaria L.
P. acre H B K.
P. cilinode Mx.
Euphorbia Presslii Guss.
Carya sulcata Nutt.
Salix nigra Marsh.
S. lucida Muhl.
S. fragilis L.
S. rostrata Rich.
S. petiolaris Sm.
S. cordata Muhl.
S. myrtilloides L.
Chamaecyparis sphaeroidea Spach.
Aplectrum hiemale Nutt.
Spiranthes cernua Rich.
S. Romanzoffiana Cham.
Pogonia pendula Lindl.
Habenaria lacera R. Br.
Aletris farinosa L.
Iris prismatica Pursh.
Sisyrinchium anceps Cav.
Clintonia borealis Raf.
Lilium Philadelphicum L.
Trillium erectum L.
Heteranthera graminea Vahl.
Juncus marginatus Rostk.
J. Greenii O. & T.
J. tenuis Willd.
J. Gerardi Loisel.
J. pelocarpus E. Meyer.
J. articulatus L.
J. militaris Bigel.
J. acuminatus Mx.
J. scirpoides Lam.
Cyperus strigosus L.
Scirpus maritimus L.
S. fluviatilis Gr.
S. polyphyllus Vahl.
S. silvaticus L.
Eriophorum cyperinum L.
Scleria pauciflora Muhl.
Carex intumescens Rudge.
C. lurida Wahl.
C. hystericina Muhl.
C. scabrata Schw.
C. vestita Willd.
C. filiformis L.
C. lanuginosa Mx.
C. stricta Lam.
C. torta Boott.
C. longirostris Torr.
C. arctata Boott.
C. Sullivantii Boott.
C. granularis Muhl.
C. conoidea Schk.
C. Hitchcockiana Dew.
C. laxiflora Lam.
C. digitalis Willd.
C. laxiculmis Schw.
C. plantaginea Lam.
C. eburnea Boott.
C. varia Muhl.
C. Pennsylvanica Lam.
C. communis Bailey.
C. vulpinoidea Mx.
C. sparganioides Muhl.
C. Muhlenbergii Schk.
C. cephaloidea Dew.
C. cephalophora Muhl.
C. echinata Murr.
C. canescens L.
C. tribuloides Wahl.
C. scoparia Schk.
C. foenea Willd.
C. silicea Olney.
C. straminea Willd.
Spartina juncea Willd.
S. cynosuroides Willd.
Panicum virgatum L.
P. dichotomum L.
P. Crus-galli L.
Setaria Italica Kunth.
Anthoxanthum odoratum L.
Oryzopsis asperifolia Mx.
Muhlenbergia Mexicana Trin.

Muhlenbergia silvatica T. & G.
 M. *Willdenovii* Trin.
Calamagrostis Canadensis Bv.
Agrostis alba L.
 A. *scabra* Willd.
Deschampsia flexuosa Trin.
Trisetum subspicatum Bv.
Avena striata Mx.
Eatonia Pennsylvanica Gr.
Eragrostis Frankii Meyer.
Poa serotina Ehrh.
 P. *trivialis* L.
 P. *debilis* Torr.
 P. *alsodes* Gr.
Glyceria obtusa Trin.
 G. *nervata* Trin.
 G. *grandis* Wats.
 G. *fluitans* R. Br.
 G. *acutiflora* Torr.
Festuca elatior L.
Bromus Kalmii Gr.
Elymus Virginicus L.
 E. *Canadensis* L.
Equisetum limosum L.
Asplenium Filix-foemina Bernh.
Aspidium spinulosum Sw.

Lygodium palmatum Sw.
Botrychium ternatum Sw.
Amanita muscaria L.
Armillaria mellea Vahl.
Tricholoma terreum Schæff.
Collybia radicata Rehl.
Pholiota discolor Pk.
Cortinarius pulchrifolius Pk.
Lactarius deceptivus Pk.
Polyporus cuticularis Fr.
Poria semitincta Pk.
Hydnum graveolens Del.
Porothelium fimbriatum Fr.
Thelephora Cladonia Schw.
Hymenochaete tabacina Lev.
 H. *corrugata* Lev.
Corticium incarnatum Lev.
 C. *radiosum* Fr.
 C. *subaurantiacum* Pk.
Ceratium hydroides A. & S.
Plasmopara viticola B. & D.
Monilia fructigena Pers.
Macrosporium commune Rabh.
Cladosporium herbarum Lk.
Cryptospora suffusa Fr.

(B.)

CONTRIBUTORS AND THEIR CONTRIBUTIONS.

Mrs. E. G. Britton, New York, N. Y.

Zygodon conoideus Dicks.

Mrs. D. B. Fitch, Norwich, N. Y.

Lygodium palmatum Sw.

Miss Bessie Grinnan, Madison Mills, Va.

Calostoma Berkeleyi Mass.

Rev. J. H. Wibbe, Schenectady, N. Y.

Chrysanthemum segetum L.

Artemisia serrata Nutt.

Erodium Cicutarium L'Her

Mimulus moschatus Dougl.

Polygonum cuspidatum S. & Z.

Eragrostis Frankii Meyer.

Rev. J. L. Zabriskie, Flatbush, N. Y.

Myriophyllum ambiguum Nutt., var. *limosum* Torr. | *Limosella aquatic* L., var. *tenuifolia* Hoffm.

Geo. F. Atkinson, Auburn, Ala.

Hypocrella tuberiformis B. & Br.

Microsphæria calocladophora Atk.

Ravenelia Cassiæcola Atk.

Uredo Fici Cast.

Ramularia areola Atk.

Cercospora Bolleana Speg.

S. M. Tracy, Starkville, Miss.

| | |
|---|---|
| Phyllosticta ulmicola <i>Sacc.</i> | Melampsora Quercus <i>Schw.</i> |
| Vermicularia affinis <i>S. & B.</i> | M. Hydrangeæ <i>Burr.</i> |
| Dinemasprium graminum <i>Lev.</i> | Helminthosporium Ravenelii <i>B. & C.</i> |
| Gloeosporium nervisequum <i>Sacc.</i> | Entyloma Physalidis <i>Wint.</i> |
| Ustilago Uniolæ <i>E. & E.</i> | Cercospora grisea <i>C. & E.</i> |
| Uromyces Dactylidis <i>Ott.</i> | C. gossypina <i>Cke.</i> |
| Puccinia globosipes <i>Pk.</i> | C. cruenta <i>Sacc.</i> |
| P. rubigovera <i>Wint.</i> | C. macroguttata <i>Atk.</i> |
| P. emaculata <i>Schw.</i> | C. erythrogena <i>Atk.</i> |
| P. coronata <i>Cd.</i> | Erysiphe communis <i>Fr.</i> |
| P. Conoclinii <i>Seym.</i> | Microsphaeria Alni <i>Wint.</i> |
| P. Anthoxanthi <i>Fekl.</i> | Sphaerotheca lanestris <i>Hark.</i> |
| Phragmidium speciosum <i>Fr.</i> | Pseudopeziza Medicaginis <i>Lib.</i> |
| Ravenelia Cassiicola <i>Atk.</i> | Acrosporum compressum <i>Tode.</i> |
| Æcidium Oldenlandianum <i>E. & T.</i> | |

E. C. Howe, Lansingburgh, N. Y.

| | |
|------------------------------------|---------------------------------|
| Carex hystericina <i>Muhl.</i> | Agrostis perennans <i>Tuck.</i> |
| C. tribuloides <i>Wahl.</i> | A. vulgaris <i>With.</i> |
| C. lurida <i>Wahl.</i> | Glyceria fluitans <i>R. Br.</i> |
| Muhlenbergia Mexicana <i>Trin.</i> | |

G. H. Hicks, Agricultural College, Mich.

| | |
|---------------------------------------|--|
| Excipula Hicksiana <i>E. & E.</i> | Dendryphium corticola <i>E. & E.</i> |
| Morchella bispora <i>Sor.</i> | Verpa digitaliformis <i>Pers.</i> |

A. P. Morgan, Preston, Ohio.

| | |
|--|--|
| Bovista minor <i>Morg.</i> | Hymenochaete purpurea <i>C. & M.</i> |
| Bovistella Ohiensis <i>E. & M.</i> | |

M. A. Howe, Berkeley, Cal.

Gloeosporium Pteridis *Hark.*

S. H. Burnham, Vaughns, N. Y.

| | |
|-----------------------------------|-------------------------------------|
| Hypericum pyramidatum <i>Ait.</i> | Blitum Bonus-Henricus <i>Reich.</i> |
| Cuphea viscosissima <i>Jacq.</i> | Houstonia purpurea <i>L.</i> |
| Cardamine pratensis <i>L.</i> | Aplectrum hiemale <i>Nutt.</i> |
| Blephilia ciliata <i>Raf.</i> | |

J. Dearness, London, Can.

| | |
|---|--|
| Phyllosticta Dircae <i>E. & D.</i> | Clypeosphaeria ulmicola <i>E. & E.</i> |
| P. staphyлина <i>D.</i> | Sphaerella Epilobii <i>Sacc.</i> |
| Ceriosporella Dearnessii <i>E. & E.</i> | Othia Ostryigena <i>E. & E.</i> |
| Micropera Fraxini <i>E. & E.</i> | Thyridium Americanum <i>E. & E.</i> |
| Botrytis epichloris <i>E. & D.</i> | Cucurbitaria ulmicola <i>Fekl.</i> |
| Puccinia Pimpinellæ <i>Lk.</i> | Diaporthe aliena <i>E. & E.</i> |
| Pezicula carpineæ <i>Pers.</i> | D. tuberculosa <i>Sacc.</i> |
| Melampsori chionea <i>Fr.</i> | D. spicata <i>E. & E.</i> |
| Anthostomella mammoides <i>E. & E.</i> | D. claviceps <i>E. & E.</i> |
| Melanconis salicina <i>E. & E.</i> | |

W. T. Davis, New Brighton, N. Y.

| | |
|--------------------------------|--------------------------------|
| Quercus Brittoni <i>Davis.</i> | Populus heterophylla <i>L.</i> |
| Q. nigra <i>L.</i> | |

N. L. Britton, New York, N. Y.

Galium Kamschaticum *Stell.*
Ranunculus septentrionalis *L.*
Aquilegia vulgaris *L.*
Lepidium Virginicum *L.*
Viola delphinifolia *Le Conte.*
Acer spicatum *Lam.*
A. Pennsylvanicum *L.*

*

Geaster argenteus *Oke.*
Ustilago Hordei *K. & S.*
Uromyces Spragueæ *Hark.*
U. Zyadeni *Pk.*
U. Eriogoni *E. & H.*
U. Euphorbiæ *C. & P.*
U. borealis *Pk.*
U. Glycyrrhizæ *R. & M.*
Puccinia Polygoni *Pers.*
P. mirabilissima *Pk.*
P. consimilis *E. & E.*
P. Gayophyti *Pk.*
P. Phragmitis *Korn.*
P. Menthæ *Pers.*
P. Tanaceti *DC.*
P. intermixta *Pk.*
P. rubigovera *Wint.*
P. Grindeliæ *Pk.*
P. Troximontis *Pk.*
P. Balsamorhizæ *Pk.*
P. Gilii *Hark.*
P. Malvastri *Pk.*
P. mutabilis *E. & E.*
P. Hieracii *Mart.*
P. Helianthi *Schw.*
P. Jonesii *Pk.*
Phragmidium Potentillæ *Karst.*
P. subcorticium *Wint.*
P. Rubi-Idæi *Karst.*
Melampsora Lini *Tul.*
M. farinosa *Schrœt.*
Melamporella Cerastii *Schrœt.*
Oronartium asclepiadeum *Fr.*
Æcidium Clematidis *DC.*
Æ. Allenii *Clint.*
Æ. Violæ *Schum.*

Rubus Millspaughii *Britton.*
Vicia hirsuta *Koch.*
Zizia aurea *Koch.*
Osmorhiza longistylis *Torr.*
Erigeron bellidifolius *Muhl.*
Senecio aureus *L.*
Tussilago Farfara *L.*

Æcidium gaurinum *Pk.*
Æ. Convallariæ *Schum.*
Æ. porosum *Pk.*
Æ. Ellisii *T. & G.*
Æ. hemisphaericum *Pk.*
Æ. Thalictri *Grev.*
Æ. monoicum *Pk.*
Æ. Urticæ *Wint.*
Æ. Plantaginis *Ces.*
Æ. Eurotias *E. & E.*
Æ. Cleomis *E. & A.*
Æ. Compositarum *Mart.*
Æ. Pini *Pers.*
Uredo Polypodii *DC.*
Rœstelia cornuta *Fr.*
Cystopus candidus *Lev.*
C. cubicus *DeBy.*
Ramularia arnicalis *E. & E.*
Cercospora Thaliæ *E. & E.*
Peziza scabrovillosa *Phil.*
Mollisia Montanensis *E. & E.*
Lachnella flammea *A. & S.*
Claviceps purpurea *Tul.*
Tapesia fusca *Pers.*
Erysiphe communis *Fr.*
E. graminis *DC.*
E. Cichoracearum *DC.*
Sphærotheca Castagnei *Lev.*
Uncinula Salicis *Wint.*
Physalospora megastoma *Pk.*
P. aurantia *E. & G.*
Rosellinia obliquata *Sacc.*
Teichospora mammoides *E. & E.*
Phyllachora Heraclei *Fr.*
P. Potentillæ *Schw.*
P. Wittrockii *Sacc.*

C. L. Shear, Alcove, N. Y.

Carex intumescens *Rudge.*
C. sparganioides *Muhl.*
C. Sullivantii *Boott.*

Botrychium ternatum *Sw.*
Amanita cæsarea *Scop.*
Urocystis Waldsteiniae *Pk.*

* The following are specimens of fungi from the collection of the late F. W. Anderson. They were communicated by Prof. Britton.

Mrs. L. L. Goodrich, Syracuse, N. Y.

Floerkea proserpinacoides Willd.

W. Herbst, Trexlertown, Pa.

Phallus Ravenelii B. & C.

| *Queletia mirabilis Fr.*

W. Falconer, Glen Cove, N. Y.

Agaricus subrufescens Pk.

C. F. Millspaugh, Waverly, N. Y.

Cylindrocolla Dendroctoni Pk.

John E. Coventry.

A fasciated ear of corn, *Zea Mays L.*

E. H. Savage, Keeseville, N. Y.

Sand incrustated specimen of fungus, *Polyporus fomentarius Fr.*

Prof. James Hall, Albany, N. Y.

Four-headed flower of dandelion, *Taraxacum officinale Web.* on a single stout or fasciated scape.

(C.)

SPECIES NOT BEFORE REPORTED.

Papaver somniferum L.

Menands, Albany county. September. Cultivated for ornament but often self-seeding and sparingly escaping from cultivation.

Prunus Cerasus L.

Voorheesville and Delmar, Albany county, and Westport, Essex county. The sour cherry is sometimes spontaneous by roadsides and near farm-houses.

Prunus domestica L.

Amagansett, Suffolk county. An apparently starved or degenerate form of the cultivated plum grows in sandy soil in this locality. It assumes a straggling bush-like form three to four feet high, or in a few instances six to eight feet. The taller specimens were seen on the north side of the road leading from Amagansett to Easthampton. The leaves on the spurs are about six lines long and three lines broad. Those on the branches are about one inch long and half as wide. On the most thrifty shoots they scarcely exceed one and a half inch in length. Flowers and fruit not seen.

Rosa humilis Marsh.

This rose, which had been previously united with *R. lucida*, is considered a distinct species in the last edition of Gray's Manual. Its most prominent distinguishing features are its shorter stems, straight slender spines, narrow stipules and lobed outer sepals. These characters, however, are somewhat variable, so that individuals occur, which connect the two in such a way as to show that they are not very sharply limited. This is the most common species about Albany. It is abundant on Mount Defiance, near Ticonderoga, and is quite variable there. One noteworthy form has the spines nearly wanting, the leaflets numerous and small, generally eight or nine lines long, and the pedicels and calyx tube as glabrous as in *R. blanda*. From *R. blanda* it may be separated by the presence of an occasional spine and by the deciduous sepals. Can it be a cross between *R. blanda* and *R. humilis*, both of which occur in this locality? *R. humilis* appears to be equally at home on rocky, clayey or sandy soil. It is abundant in the eastern part of Long Island.

Rosa Sayi Schw.

I refer to this species, specimens collected near Westport, Essex county, in June. The essential characters of the species are shown, but in some cases only partially or slightly. The serrulate teeth of the leaflets are not always present, and their resinous-puberulent character is sometimes very slight. The stems are always very prickly, and often the branches also. The prickles are sometimes intermingled with straight, slender spines, and the stipules, which are either narrow or dilated, are pretty constantly and distinctly glandular-ciliate. The leaflets are more rounded or obtuse at the base than in *R. blanda*, from which it is separated by the characters just mentioned, although its variation from typical *R. Sayi* seems to be in the direction of *R. blanda*. In the Manual the species is credited from Northern Michigan and Wisconsin to Minnesota and Colorado. Possibly it may have been introduced into our locality from the west, but it is well established both north and west from Westport, and has been here many years.

Rosa Engelmanni Watson.

Fruiting specimens of a rose very similar to the preceding species were collected several years ago at the base of Mount

Defiance, near Ticonderoga. They differ from *Rosa Sayi* in the shape of the fruit, which is distinctly longer than broad.

***Rubus Millspaughii* Britton.**

Avalanche Pass, Essex county. *N. L. Britton*. Morehouseville, Hamilton county. July.

The glabrous character of this species separates it from small forms of *Rubus villosus* var. *frondosus*. The specimen contributed by Professor Britton is wholly without spines, those collected by myself have a few weak spines.

***Rubus setosus* Bigel.**

Common in the southern and western part of the Adirondack region. Morehouseville and Lake Pleasant, Hamilton county, Old Forge or "Brown Tract," Herkimer county, and Garoga, Fulton county. July and August.

This plant was previously reported by me as *Rubus hispidus* var. *suberectus*, but later observations led me to the belief that it is a distinct species. Professor Britton agrees with me in this belief, and thinks it belongs to the species under which I have now placed it, and with the originally published description of which it agrees very well, except that its ripe fruit is black instead of red, as in Bigelow's plant. Doctor Torrey, in *N. Y. State Flora*, regarded Bigelow's plant as a variety of *Rubus hispidus* and abbreviated the description too much to make it satisfactory. The specimen which he placed in the Herbarium as a representative of this plant is clearly a mere form of *R. hispidus*.

R. setosus, as here understood, is quite plentiful in the localities mentioned and evidently delights in the soil of mixed sand and gravel which is common in that region. I observed the past season that it had taken possession of the old neglected garden of Arnold house, Fulton Chain, and was apparently fast overrunning the whole area. It thrives better on dry upland than in wet swampy places, though it occasionally appears in such localities. The old abandoned fields and pastures of the region mentioned are most congenial to it. Unthrifty specimens of it were seen on the summit of Bald mountain near Third lake. In no case have I found it associated with *R. hispidus*, which is strangely absent or scarce in this whole region. The fruit is ripe in August. It is

rather small, black when ripe and scarcely inferior in flavor to that of the dewberry, *R. Canadensis*, or of the leafy blackberry and of Millspaugh's blackberry.

***Galium Kamtschaticum* Stell.**

Mount Marcy. August. *Britton*. The specimens are in fruit, but no flowers are shown. The species may be distinguished from the glabrous variety of *Galium circeazans* by its long erect pedicels.

***Oenothera Oakesiana* Robbins.**

Luzerne, Warren county. This is *O. biennis* var. *Oakesiana* Gr.

***Chrysanthemum segetum* L.**

Introduced and growing in fields near Niskayuna, Schenectady county. September. *Rev. J. H. Wibbe*.

***Artemisia serrata* Nutt.**

Banks of the Mohawk, three miles below the aqueduct and opposite Rock island. August. *Wibbe*.

An introduction from the west.

***Lactuca hirsuta* Muhl.**

Rocky hillsides. Whitehall. June.

***Blephilia ciliata* Raf.**

Vaughn's, Washington county. *S. H. Burnham*.

***Polygonum cuspidatum* S. & Z.**

Banks of the Mohawk below the aqueduct, Schenectady county. August. *Wibbe*. Introduced as an ornamental plant, but sometimes escaping from cultivation.

***Quercus Brittoni* Davis.**

Watchogue, Richmond county. September. *W. T. Davis*. Mr. Davis considers this oak to be a hybrid between *Quercus nigra* and *Q. ilicifolia*.

Scirpus Peckii Britton.

Lake Pleasant, Hamilton County. August. First collected in this locality in 1875. It was again collected in 1891, but in a new station. It was reported last year under the name *Scirpus polyphyllus* var. *macrostachys*. Professor Britton has recently published it as a distinct species, and as such it is now reported. It certainly is quite distinct from our ordinary forms of *S. polyphyllus*. Specimens sometimes occur in which a cluster of spikelets is borne on a long pedicel issuing from the axil of the uppermost leaf.

Panicum nitidum Mx.

Sandy soil near Riverhead. July.

Panicum laxiflorum Lam.

With the preceding species. July.

Zygodon conoideus Dicks.

Base of a birch tree. Adirondack mountains. Mrs. E. G. Britton. The specimen is sterile.

Tricholoma serratifolium n. sp.

Pileus fleshy, firm, convex or nearly plane, often irregular, dry silky or flocculose-squamulose, white, often slightly tinged with brown or yellowish-brown in the center, flesh white or whitish, taste at first mild, then acrid; lamellæ broad, close, adnexed, serrate or eroded on the edge, white; stem short, stout, solid, white; spores broadly elliptical or subglobose, .0002 to .00024 in. long, .0002 broad.

Pileus 2 to 4 in. broad; stem about 1 in. long, 3 to 6 lines thick.

Woods. Shokan. September.

This is apparently related to such species as *T. psammopodium* and *T. impolitum*, but distinct from them in color and in the character of the lamellæ.

Tricholoma submaculatum n. sp.

Pileus convex or nearly plane, sometimes slightly depressed in the center; glabrous, brownish, sometimes tinged with ferruginous, becoming obscurely spotted with age, flesh white; lamellæ

thin, close, white, becoming orange-red or saffron color where wounded or bruised; stem solid, silky-fibrillose, white, often decumbent or radicating at the base; spores minute, broadly elliptical or subglobose, .00016 to .0002 in. long, .00016 broad.

Pileus 1 to 2 in. broad; stem 1 to 3 in. long, 3 to 5 lines thick. Borders of woods. Shokan. September.

The species may easily be recognized by the obscurely spotted pileus and by the peculiar color assumed by any part of the plant where cut or bruised. The spots indicate an affinity with the tribe Guttata, but inasmuch as the specimens were collected in a dry time, the pileus did not exhibit the moist character to be expected in members of that tribe.

***Clitocybe albidula* n. sp.**

Pileus thin, at first convex, then umbilicate or centrally depressed, glabrous, hygrophanous, pale grayish-brown and finely striatulate on the margin when moist, whitish when dry; lamellæ close, adnate or slightly decurrent, dingy-white; stem short, glabrous or slightly pruinose, hollow, colored like the pileus; spores minute, elliptical, .00016 to .0002 in. long, .0001 to .00012 broad.

Pileus about 1 in. broad; stem 1 in. long, 1 to 1.5 lines thick. Under pine trees. Delmar. September.

Related to *C. candicans*, from which it is distinguished by its more dingy color and by its decided farinaceous odor. The margin of the young pileus is whitened by a pruinosity or a minute white villosity.

***Clitocybe revoluta* n. sp.**

Densely caespitose; pileus convex or nearly plane, glabrous, whitish and slightly striatulate on the margin when moist, white when dry, the thin margin commonly and irregularly revolute; lamellæ thin, narrow, close, adnate or slightly decurrent; stem glabrous, solid when young, stuffed or somewhat hollow when old, whitish; spores subglobose, .00016 to .0002 in. long.

Pileus 1 to 3 in. broad; stem 2 to 3 in. long, 3 to 5 lines thick. Woods. Alcove, Albany county. September.

This plant forms dense tufts of considerable extent and composed of many individuals. In these tufts the pileus is more or less irregular with the margin wavy and revolute. Occasionally

a plant is seen growing apart from the general mass and then its pileus is apt to be regular and the margin horizontal.

***Collybia ochroleuca* n. sp.**

Pileus thin, convex, then umbilicate or centrally depressed, glabrous, pale ochraceous, flesh white, taste farinaceous; lamellæ broad, subdistant, rounded behind or emarginate, whitish; stem firm, slender, glabrous, stuffed or hollow, colored like the pileus; spores elliptical, .00024 to .0003 in. long, .0002 broad.

Pileus 6 to 12 lines broad; stem about 1 in. long, 1 line thick.

Woods. Shokan. September. Related to *C. esculenta*, but distinct by its umbilicate or depressed pileus and its farinaceous odor and taste.

***Mycena hemisphærica* n. sp.**

Pileus thin, firm, hemispherical, glabrous, hygrophanous, brownish and striatulate when moist, gray or grayish-brown when dry; lamellæ subdistant, arcuate, adnate, livid-white; stem glabrous, hollow, livid-white; spores broadly elliptical, .00016 to .0002 in. long, .00012 broad.

Pileus 5 to 8 lines broad; stem 1 to 1.5 in. long, 1 to 1.5 lines thick.

Mossy prostrate trunks of trees in woods. Fulton Chain. August.

The species belongs to the tribe Rigidipedes. It is distinguished from *M. galericulata* by its hemispherical hygrophanous pileus, the character and color of the lamellæ and by its smaller spores. It is gregarious or subcæspitose in its mode of growth.

***Mycena rugosa* Fr.**

Woods. Shokan. September.

***Entoloma nidorosum* Fr.**

Woods. Shokan. September.

Our specimens differ from the type in having the stem solid and the lamellæ adnate. For the present I designate them as *Var. solidipes*.

***Tubaria canescens* n. sp.**

Pileus very thin, almost membranous, convex, grayish-white or canescent, coated with minute whitish fibrils or appressed tomentum; lamellæ distant, decurrent, cinnamon color; stem slender,

whitish, fibrillose, with a white mycelium at the base; spores elliptical, .00024 in. long, .00016 broad, often containing a shining nucleus.

Pileus 2 to 3 lines broad; stem 6 to 8 lines long.

Damp naked soil in woods. Selkirk. July.

This is a very small species closely allied to *Tubaria autochthona*, from which it is separated by the shape and color of the pileus, the decidedly decurrent lamellæ and the fibrillose stem. As in that species, the spores are unusually pale. The dry pileus is distantly sulcate or striate.

***Agaricus subrufescens* n. sp.**

Pileus rather thin and fragile, at first deeply hemispherical, then convex or broadly expanded, often wavy or irregular, silky-fibrillose or minutely and obscurely squamulose, varying in color from whitish or grayish to dull reddish-brown, flesh white, unchangeable; lamellæ close, free, at first white or yellowish-white, then pinkish, finally blackish-brown; stem minutely flocculose below the annulus, hollow, white, somewhat thickened or bulbous at the base; the annulus membranous, white, externally flocculose; the mycelium white, forming slender branching root-like strings; spores elliptical, brown, .00024 to .00028 in. long, .00016 to .0002 broad.

Pileus 2 to 4 in. broad; stem 2 to 6 in. long, 4 to 8 lines thick.

Leaf mold. Glen Cove. October. W. Falconer. Also cultivated.

In the form of the young pileus and in its color in the reddish tinted specimens, also in the white color of the young lamellæ, this species makes an approach to *A. campestris* var. *rufescens*, but unlike that variety the wounded flesh does not become red. From typical *A. campestris* it differs in many respects — in the thin flesh, the color of the young lamellæ, the character of the stem and its annulus and in its mycelium. It resembles more closely *A. placomyces* and *A. silvaticus*, but from the former it may be separated by the shape of the pileus and the more obscure character of its scales and by its annulus, from the latter, by the color of the pileus and the young lamellæ and also by the annulus, which is externally floccose-squamulose and also not distant as in that species.

Mr. Falconer says that under cultivation it is exceedingly productive, growing equally well in sunshine and in shade, but being fond of warmth. When grown in the dark the color of the pileus is darker than when grown in the light. The mushrooms appear in twenty-four to thirty days after the planting of the spawn, which is about two weeks earlier than in the case of the common mushroom. They have a decided flavor and are good eating. From this it will readily be seen that in productiveness, early appearance and ability to endure warm weather it is an improvement on the common mushroom.

Hypholma aggregatum *n. sp.*

Densely caespitose; pileus thin, convex or subcampanulate, grayish-white, obscurely spotted with appressed brownish fibrils; lamellæ subdistant, rounded behind, nearly free, at first whitish, then brown or blackish-brown with a whitish edge; stem rather long, hollow, somewhat floccose or fibrillose, white; spores brown, elliptical, .0003 in. long, .00016 to .0002 broad.

Pileus about 1 in. broad; stem 2 to 3 in. long, 1.5 to 2 lines thick.

At the base of trees and stumps in woods. Alcove. Sept.

The caespitose habit and obscurely spotted grayish-white pileus are marked features of this species. From *H. silvestre* the species may be distinguished by its smaller size, adnexed or nearly free lamellæ, which have no rosy tint, and by its very caespitose mode of growth.

Deconica bryophila *n. sp.*

Pileus thin, membranous on the margin, subconical, becoming convex or nearly plane, glabrous, hygrophanous, chestnut color or dark brown and striatulate on the margin when moist, creamy-white, grayish-white or pale brown when dry and often distinctly striate on the margin; lamellæ broad, distant, adnate or slightly decurrent, plane or ventricose, at first pale-brown, then purplish-brown; stem slender, slightly silky-fibrillose when young, stuffed or hollow, pallid or brown; spores brown, elliptical, .0003 in. long, .0002 broad.

Pileus 3 to 6 lines broad; stem 8 to 12 lines long.

Sandy soil among mosses. Dehmar and Karner. May.

From *D. bullacea*, this species differs in its not viscid pileus and in its distant lamellæ. The chestnut-colored specimens sometimes have the center of the pileus darker than the margin.

***Deconica bulbosa* n. sp.**

Pileus submembranous, convex, becoming nearly plane, glabrous, slightly striate on the margin, whitish tinged with brown; lamellæ broad, distant, adnate, purplish-brown; stem slender, firm, hollow, bulbous, both it and the bulb densely grayish-fibrillose; spores purplish-brown, elliptical, .0003 in. long, .0002 broad.

Pileus 3 to 6 lines broad; stem 8 to 12 lines long, scarcely half a line thick.

Dead stems of herbs. Delmar. September.

This small species resembles the preceding one in size, but it differs in its place of growth, its paler color, its bulbous stem and in the grayish fibrils that clothe both stem and bulb.

***Coprinus arenatus* n. sp.**

Pileus thin, at first broadly ovate or subhemispherical, soon convex or campanulate, adorned with small white tomentose scales, striate on the margin, whitish or grayish-white, becoming grayish-brown with age; lamellæ broad, crowded, free, grayish-white, soon purplish-brown, finally black, furnished with numerous projecting hyaline cystidia; stem short, equal, glabrous, hollow, white; spores broadly ovate or subglobose, black in the mass, purplish-brown by transmitted light, .0003 to .00035 in. long, .00025 to .0003 broad.

Pileus 1 to 2 in. broad; stem 1 to 2 in. long, 1 to 2 lines thick.

Solitary or gregarious, growing on sandy soil recently overrun by fire. Karner. May.

The mycelium binds the sand together in a globular mass at the base of the stem. The scales of the pileus are easily separable and soon disappear. The marginal striations extend half way or more toward the center. The long cystidia give a peculiar appearance to the lamellæ, and in the fresh plant they may be seen extending across the interspaces. The species belongs to the section *Tomentosi* and is remarkable for its peculiar habitat.

Hygrophorus metapodius Fr.

Woods. Shokan. September. Our specimens were not at all viscid, nor did wounds of the flesh and lamellæ turn red, but in other respects they correspond so well to the figure and description of this species that we dare not separate them.

Russula adusta Fr.

Sandy soil in pine woods. Delmar. September.

Closely allied to *R. nigricans*, but differing in its thinner, closer and more decurrent lamellæ, which do not assume a reddish color where wounded. The specimens are commonly smaller than either *R. nigricans* or *R. sordida*, and they are less disposed to turn black in drying.

Merulius Corium Fr.

Decorticated wood of deciduous trees. Boiceville, Ulster county. September.

In our specimens the plants are wholly resupinate, slightly reflexed, or they have a well developed pileus. In this case the pileus is villous, concentrically sulcate and white. The hymenium also is somewhat concentrically sulcate. European authors do not agree in their descriptions of the size and shape of the spores of this species. In our specimens they are oblong or lanceolate, .0003 in. long, .00012 broad.

Merulius serpens Tode.

Decaying wood and branches. Lake Pleasant. August.

Odontia lateritia B. & C.

Interior of prostrate much-decayed trunks of deciduous trees, apparently birch, chestnut and oak. Fulton Chain. August. Shokan. September.

Under their description of this species, Berkeley and Curtis remark that *Phlebia hydnoides* Schweinitz is apparently the same thing. So far as our specimens are concerned Schweinitz's description is far more complete and satisfactory than that of Berkeley and Curtis, although the fungus is more closely allied to *Odontia* than to *Phlebia*. It forms extensive patches, creeping over the surface and following the inequalities of the wood. Although the substance is quite thick it is not separable from the matrix.

The color of the fresh plant is a beautiful orange, but it fades in drying so that it may not inaptly be called brick red. The hymenial warts or protuberances are sometimes arranged in lines or series. In drying, the surface becomes more or less chinky so that the protuberances appear to be collected in fascicles.

Thelephora subochracea *n. sp.*

Resupinate, incrusting, running over fallen leaves and twigs and forming suborbicular patches one to three inches broad, thin, tough, dry, pale-ochraceous, sometimes with a slight whitish byssine border.

Woods. Shokan. September.

The specimens have the appearance of some species of *Corticium* but the dry tough texture indicates a closer relation to *Thelephora*. They are scarcely in perfect condition.

Corticium Kalmiæ *n. sp.*

Effused, thin, tender, inseparable from the matrix; subiculum and indeterminate margin composed of slender whitish filaments; hymenium glabrous, continuous, yellowish-ochraceous; spores smooth, elliptical, .0004 to .0005 in. long, .00024 to .0003 broad.

Dead stems of mountain laurel, *Kalmia latifolia*.

Shokan. September.

This is apparently related to such species as *C. deglubens* and *C. secedens*, but differing from both of these in its inseparable character.

Exobasidium Vaccinii *Wor.*

Living leaves of bearberry, *Arctostaphylos Uva-ursi*. River-head. July.

Tylostoma mammosum *Fr.*

Sandy soil. Delmar. October. A rare species.

Tylostoma campestre *Morg.*

Sandy soil. West Albany. November.

Lycoperdon hirtum *Mart.*

Brewerton and Catskill mountains. This was formerly included by me with *L. atropurpureum*, from which it scarcely differs except in its depressed peridium and cord-like root.

***Lycoperdon asterospermum* D. & M.**

North Greenbush and West Albany.

***Lycoperdon perlatum* Pers.**

Brewerton, Adirondack and Catskill mountains. August and September. Following the illustrious Fries, I formerly included this with *L. gemmatum*, but it is so well marked by the prevailing form of the peridium and especially by the character of the spines of the cortex that it seems best to consider it a distinct species.

***Lycoperdon Curtisii* Berk.**

Ground by roadside. Guilderland. October.

***Didymium proximum* B & C.**

Fallen twigs and leaves of pine. Lake Pleasant. August.

***Physarum contextum* Rost.**

Bark of trees. Fulton Chain. August.

***Peronospora Linariæ* Fekl.**

Living stems and leaves of Canadian toadflax, *Linaria Canadensis*. Riverhead. July. This fungus is described as pure white, but in our specimens the patches have a dirty-white or grayish hue often with a slight violaceous tint. The long and narrowly obovate conidia are quite characteristic.

***Phyllosticta Dioscoreæ* Oke.**

Living leaves of yam, *Dioscorea villosa*. Riverhead. July.

Var. *grisea*. Spots gray with a narrow reddish-brown margin; perithecia epiphyllous, numerous, black; spores globose or ovoid.

***Phoma vulgaris* Sacc.**

Dead stems of long-fruited anemone, *Anemone cylindrica*. Delmar. June. The spores in our plant are slightly smaller than in the type.

***Macrophoma versabilis* n. sp.**

Perithecia scattered, irregular, globose or compressed and hysteriiform, erumpent or subsuperficial, black; spores oblong-elliptical, colorless, .0005 to .0006 in. long, .00025 to .0003 broad; sporophores generally shorter than the spores.

Dead branches and galls of oak, *Quercus ilicifolia*. Karner. May.

Apparently intermediate in character between *M. dryina* and *M. nervisequa*, having spores like those of the former and perithecia somewhat resembling those of the latter.

Sphæronema Lonicerae *n. sp.*

Perithecia numerous, scattered uniformly, small, .009 to .012 in. broad, at first covered by the epidermis, then erumpent, narrowed above into a rostrum about as long as the diameter of the perithecium, black; spores numerous, elliptical or oblong, colorless, .00016 to .0003 in. long, .00008 to .00012 broad, oozing out in wet weather and forming a minute hyaline globule.

Living stems of hairy honeysuckle, *Lonicera hirsuta*. Brownville. June.

This is easily distinguished from *Sphaerographium Lonicerae*, which has fusiform curved quadrinucleate spores.

Septoria Trilliana *Sacc.*

Living leaves of self-heal, *Brunella vulgaris*. Menands. August.

Micropera Nemopanthis *n. sp.*

Perithecia densely and prominently caespitose, minute, black, opening on the application of moisture and revealing the whitish, gelatinous contents; spores subfiliform, curved or sigmoid, tapering toward each end, .0016 to .0024 in. long; sporophores short.

Dead branches of mountain holly, *Nemopanthes Canadensis*. Karner. May.

Glœosporium Platani *Oud.*

Living or languishing leaves of sycamore, *Platanus occidentalis*. Shokan. September.

This is quite distinct from *G. nervisequum*, both in habit and in the size and color of the acervuli.

Glœosporium phomoides *Sacc.*

Fruit of tomato. Menands. September.

Glœosporium fructigenum *Berk.*

On grapes. Menands. September and October.

This is destructive to the fruit, causing it to decay.

Cylindrosporium Acori *n. sp.*

Spots numerous, subelliptical, sometimes confluent, blackish, nuclei minute; spores amphigenous, forming minute tufts, white, oblong or subcylindrical, sometimes narrowed toward one end, .0004 to .0008 in. long, about .00016 broad.

Living or languishing leaves of sweet flag, *Acorus Calamus*. Sandlake. September.

The spots, in size and shape, resemble those of *Uromyces pyriformis*. They are sometimes slightly whitened in the center by the confluence of the tufts of spores.

Urocystis Waldsteiniae *n. sp.*

Sori large, oblong, following the nerves of the leaf, commonly near the margin and nearly parallel to each other, surrounded by the ruptured epidermis, black; spores not easily separable, three to six or more in a glomerule, the central and peripheral similar, subglobose or elliptical, often angular, .0005 to .0006 inch long, .0004 to .0005 broad, the glomerules very unequal in size and in the number of component spores.

Living leaves of barren strawberry, *Waldsteinia fragarioides*. Alcove. June. *C. L. Shear*.

This species is apparently closely allied to *U. Filipendulae*. It seems to connect *Urocystis* with *Thecaphora* and to be ambiguous between these two genera. When there are but three spores in a glomerule the central one is usually larger than the others.

Specimens of this fungus have also been received from Professor Dearness, of London, Canada.

Cryptospora Goeppertiana *Kuhn.*

Living stems and branches of Canadian blueberry, *Vaccinium Canadense*. Fulton Chain. August. Also on the same host and on swamp blueberry, *Vaccinium corymbosum*. Sandlake. September.

This fungus is destructive to its host. The affected branches appear to live but one year. Their leaves are dwarfed in size or wholly obliterated, the branches themselves are generally unnaturally multiplied, and appear to form tufts or clusters, and they are unusually thick or swollen and their tissues greatly changed. Sometimes they are much twisted, curved or contorted, but more

often they are straight and erect. In color they are often reddish-brown or chestnut. I have never seen any fruit on an affected branch.

Æcidium Lupini *n. sp.*

Spots numerous, small, orbicular, at first yellowish-green, becoming purplish-brown with age; spermogones epiphyllous, central; peridia hypophyllous, crowded, short; spores globose, verruculose, orange-yellow, .001 to .0016 in. broad.

Living leaves of common lupine, *Lupinus perennis*. Karner. June.

Uredo Chimaphilæ *n. sp.*

Spots none; sori chiefly hypophyllous, scattered or crowded, a long time covered by the epidermis, yellow or pale-orange; spores narrowly ovate oblong or subelliptical, .001 to .0012 in. long, .0005 to .0007 broad.

Living leaves and flowers of spotted wintergreen, *Chimaphila maculata*. Amagansett. July.

The fungus seems to kill the leaves it attacks.

Cylindrium elongatum *Bon.*

Fallen leaves of chestnut. Shokan. September.

Cylindrium griseum *Bon.*

Fallen leaves of chestnut-oak, *Quercus Prinus*. Shokan. September. Much like the preceding species, but distinguished by its gray color.

Verticillium sphærophilum *n. sp.*

Hyphæ minutely and stellately tufted, white, sparingly branched; branches one to three at a node, rather long, gradually tapering upward; spores elliptical, .0003 in. long, .00015 broad.

On *Hypoxyylon coccineum*. Shokan. September.

The *Verticillium* appears to develop from the ostiola of its host.

Periconia tenuissima *n. sp.*

Effused, forming a thin indefinite purplish-brown downy stratum on the matrix; fertile hyphæ erect, slender, simple, scarcely septate, .011 to .014 in. long, .00015 thick; spores aggre-

gated into a minute head, globose, .0001 to .00012 in. broad, colored like but paler than the hyphæ.

On a thick stratum of mycelium of some wood inhabiting fungus. Adirondack mountains. July.

***Zygodesmus fulvus* Sacc.**

Decaying bark of maple, *Acer saccharinum*. Lake Pleasant August.

***Cladosporium Zeæ* n. sp.**

Mycelial filaments colorless, branched, creeping among the tissues of the matrix and causing the epidermis to rupture; fertile hyphæ slender, sparingly septate, more or less elongate; densely interwoven and forming a grayish-green velvety stratum; spores very variable, globose elliptical or oblong, .00016 to .0008 in. long, continuous or at length with one to three septa.

Unripened grains of Indian corn, *Zea Mays*. Menands. September.

The species of *Cladosporium* are generally saprophytes, but this one appears to attack the living tissues of the grain. The kernel ruptures at the apex, revealing its white starchy contents, which are soon overspread by a grayish-green or olivaceous velvety coating of filaments which give a moldy appearance to the exposed surface. The rupture widens and the contents gradually disappear till the grain is deeply excavated. The fungus is a peculiar and apparently an injurious one.

***Napicladium gramineum* n. sp.**

Spots brown, soon elongated and confluent, often occupying the whole leaf; tufts minute, punctiform, black, the hyphæ short, crowded, somewhat nodulose above; spores clavate, having one to three septa, .0012 to .0024 in. long, .0004 to .0005 broad.

Living leaves of rough meadow grass, *Poa trivialis*. Delmar. June.

This fungus is evidently a harmful one. It kills the leaves attacked by it. It differs from *N. arundinaceum* in its punctiform habit and narrower spores.

Stilbum madidum *n. sp.*

Stems numerous, sometimes caespitose, .02 to .03 in. long, white or whitish, glabrous; head minute, subglobose, pellucid-white; spores oblong, often slightly narrowed toward one end, .0005 to .0006 in. long, about .00016 broad.

Sap-moistened cut surface of a birch stump, *Betula lutea*. Lake Pleasant. August.

The mycelium permeates a gelatinous stratum which overspreads the wood. The species is distinguished from *S. macrocarpum* by its white capitulum and more narrow spores.

Coremium glaucum *Fr.*

Fallen acorns. Shokan. September.

This is considered by some to be a mere form of *Penicillium glaucum*, from which it differs in having a stem composed of compacted filaments.

Fusarium viticolum *Thum.*

Grapes. Menands. September.

Our specimens differ from the type in the smaller superficial sporodochia and in the longer and more acutely pointed spores. They constitute a new variety if not a distinct species. For the present I call them var. *uvicolum*. Sporodochia minute, numerous, gregarious, superficial, depressed, flesh-colored; spores narrowly fusiform, generally curved, acute or acuminate, three to five septate, .0016 to .002 in. long.

Lachnella citrina *n. sp.*

Receptacle minute, .02 to .03 in. broad, sessile or with a very short stem, villose-tomentose, citrine-yellow, the hymenium yellow inclining to orange, generally concealed, when dry, by the connivent margin; asci subcylindrical, about .003 in. long; paraphyses filiform, equaling, or a little surpassing the asci; spores oblong or subfusiform, .0004 to .0005 in. long, .00016 broad.

Bark of chestnut trees. Shokan. September.

In some instances the marginal hairs of the cups are white.

Anthostoma Ontariensis E. & E.

Dead branches of willow, *Salix discolor*. Karner. May.

In our specimens the stroma is eutypoid rather than valsoid and the spores are a little broader than in the type.

Stigmatea Geranii Fr.

Living and languishing leaves of Carolinian cranesbill, *Geranium Carolinianum*. Brownville. June.

Massariella Xanthoxyli n. sp.

Perithecia small, .02 to .028 in. broad, immersed in the bark, scattered or subseriate, slightly elevating and at length piercing the epidermis; asci 8-spored; spores crowded or biseriate, at first colorless, then colored, uniseptate, quadrinucleate, oozing out and forming a conical mass, then distinctly uniseptate but not nucleate, .0024 to .0027 in. long, .0005 to .0007 broad.

Dead stems and branches of prickly ash, *Xanthoxylum Americanum*. Mechanicville. May.

In young specimens the bark has a much smoother and cleaner appearance than in old ones. In these it is roughened and stained by the heaps of ejected spores. The young spores have a strong resemblance to those of *Massaria vomitoria*, but the perithecia are much smaller than in that species and the uniseptate mature spores are quite distinct.

Ophiobolus subolivaceus n. sp.

Perithecia numerous, depressed, .012 to .014 in. broad, at first covered by the epidermis, then superficial, black; asci clavate or cylindrical; spores slightly curved, gradually narrowed toward each end, yellowish-brown by transmitted light, five-septate, .002 to .0025 in. long, .00016 broad, the third cell slightly swollen.

Dead stems of herbs, apparently of *Thalictrum polygamum*. Mechanicville. May.

This is closely allied to *O. olivaceus*, from which I have separated it because of its superficial perithecia and constantly five-septate spores.

(D.)

EXTRALIMITAL SPECIES.

The following species of fungi, which are considered new or worthy of mention, have been received from correspondents for identification. They were collected outside the limits of our State and are therefore noticed separately.

Phallus Ravenelii B. & C.

Var. *minor*. Plant small, 2 to 3.5 inches high, the part of the veil pendant from the top of the stem about equal to the pileus in length.

Trexlerstown, Pennsylvania. W. *Herbst*.

Queletia mirabilis Fr.

Spent oak tan bark. Trexlerstown, Pennsylvania. August. *Herbst*. So far as I know, this rare and interesting fungus has not before been detected in this country. It has the appearance of a large overgrown species of *Tylostoma*. The specimens vary from two to six inches long. The peridium or head is globose, and from one to two and a half inches in diameter. The stem is from four to eight lines thick, and externally is very ragged, shreddy and lacerated. It is easily separable from the head, to which it is attached in a kind of socket as in *Tylostoma*. The genus *Queletia* is especially distinguished from *Tylostoma* in having no apical aperture to the peridium. This, when mature, cracks open, either by a single long fissure or by several. The description of the single known species, as given in *Sylloge*, does not agree fully with our specimens, but these are manifestly the same specifically as a specimen collected in France and communicated to us by Doctor N. Patouillard, who labeled it *Queletia mirabilis* Fr. The dimensions of our specimens considerably exceed those assigned to the species, the spores are smaller and the color of the contents of the peridium is a dull tawny or brownish-ochraceous rather than flavescent or golden

yellow, so that I should have considered them a distinct species, or at least a variety, but for their agreement with the specimen from France.

Phoma exocarpina *n. sp.*

Perithecia gregarious, subsuperficial, .014 in. broad, black; spores narrowly elliptical, hyaline, .0003 to .0004 in. long, .00016 broad.

Exocarp of old pignuts, *Carya porcina*. Michigan. May. *G. H. Hicks*.

Macrophoma Philodendri *n. sp.*

Perithecia scattered or gregarious, small, .007 to .014 in. broad, variable in form, thin, erumpent, black, opening by a wide mouth when moist and revealing the white mass of spores within; spores oblong or subcylindrical, colorless, sometimes binucleate, .0006 to .0008 in. long, .00016 to .0002 broad, supported on slender sporophores about equal to the spores in length.

Var. *maculicola*. Perithecia on definite white spots.

Living and dead leaves of *Philodendron pertusum*, growing in a conservatory. Michigan. May. *Hicks*.

Morchella bispora *Sor.*

Var. *truncata*. Pileus broadly rounded or truncate, its costae slightly prominent, the margin often a little recurved; paraphyses numerous; stem long. Michigan. May. *Hicks*.

Geopyxis Hicksii *n. sp.*

Receptacle about 6 lines broad, infundibuliform, glabrous, brownish, the hymenium adorned with a few costae radiating from the center; stem slender, from 8 to 12 lines long, scarcely 1 line thick, slightly enlarged above and expanding into the receptacle, brown; asci cylindrical, .0006 to .0008 in. long, .0005 broad; spores elliptical, even, .0005 to .0006 in. long, .0003 to .0004 broad.

Ground. Michigan. May. *Hicks*.

Remarkable for the straight radiating ridges of the hymenium, by which the species may easily be recognized.

Urnula Geaster *n. sp.*

Receptacle urceolate or cupulate, 1 to 2.5 inches broad, at length splitting into 4 to 6 rays, narrowed below into a stem-like base 3 to 5 lines thick, externally everywhere clothed with a dense velvety coat of slender, interwoven, minutely papillose brown hairs, flesh white; hymenium white or whitish, .035 in. thick; asci very long, cylindrical, .03 in. long; spores uniseriate, oblong or oblong-fusiform, pointed at each end, colorless, .0025 to .003 in. long, about .0006 broad, often containing a single large nucleus.

Ground. Austin, Texas. November. *L. M. Underwood.*

This species is well marked by its Geaster-like rays, its dense external velvety-tomentose covering, its thick hymenium and its very long spores. These surpass in length the spores of any other species of *Urnula* known to me.

Diatrypella Underwoodii *n. sp.*

Stroma small, .014 to .028 in. broad, prominent, subsuperficial, convex or subconical, uneven, black; perithecia few, 1 to 3 in a stroma, the ostiola obscure; asci fusiform or subclavate, long-pedicellate, the sporiferous part about .003 in. long, often swollen or irregularly tumid in the middle or at the base, the pedicel nearly as long as the sporiferous part; spores allantoid, .0003 in. long, .0001 broad.

Dead branches of mesquit. Austin, Texas. November. *Underwood.*

Distinguished for its very small verrucose stroma with few perithecia, and for its singularly swollen and irregular asci.

Rhytidhysterium Prosopidis *n. sp.*

Perithecia superficial, very hard when dry, subelliptical or trigonal, black, with very obtuse, thick, involute, crenulate or transversely sulcate-costate labiæ, becoming expanded and softer when moistened, suborbicular, revealing the dingy yellowish-green distinctly margined disk; asci slender, cylindrical, .007 to .008 in. long, .00045 to .0005 broad, eight-spored; spores uniseriate, oblong, sometimes slightly curved, at first colorless and uniseptate, then colored and triseptate, .0008 to .0012 in.

long, .0003 to .0004 broad; paraphyses slightly surpassing the asci, several times forked or multifid at the apex.

Dead branches of mesquit, *Prosopis juliflora*. Austin, Texas. November. *Underwood*.

This species is apparently related to *R. Braziliense*, from which I have separated it because of its more slender asci and smaller spores.

***Chætophoma setigera* n. sp.**

Perithecia minute, .003 to .005 in. broad, gregarious, epiphyllous and amphigenous, subglobose, black, seated on a thin effused superficial separable blackish stratum of interwoven filaments and adorned with a few slender erect or divergent black setæ .003 to .0045 in. long; spores numerous, minute, elliptical or oblong, colorless, .00016 to .00024 in. long, .00008 to .0001 broad, often with a minute nucleus at each end.

Living leaves of coast live oak, *Quercus agrifolia*. Berkeley, California. March. *M. B. Howe*.

***Cylindrocolla Dendroctoni* Pk.**

(Flora of West Virginia, p. 516.)

Sporodochia minute, forming irregular masses, white or whitish, somewhat waxy; sporophores slender, abundantly branched above, often compacted below into a short stem-like base; spores catenulate, short cylindrical, subtruncate, colorless, .00016 to .0002 in. long, .00008 to .0001 broad.

Dead insects, *Dendroctonus frontalis*, and the inner bark of pine just about them. West Virginia. May. *C. F. Millspaugh*.

The insects are probably killed by the fungus as they lie dead in the furrows which they had excavated in the inner bark of pine trees, *Pinus inops*.

(E.)

NOTES AND OBSERVATIONS.

***Anemone Virginiana* L.**

The variety with white obtuse petals was found near Whitehall.

***Anemone nemorosa* L. var. *quinquefolia*.**

Common near Delmar, also at Karner. May.

Magnolia glauca *L.*

This small but beautiful tree has long been credited to Long Island, but I have been able to find it in only a single locality. In this place the trees are ten or twelve feet high and very slender, the trunk scarcely exceeding an inch or an inch and a half in diameter. The branches are short, which give the trees a rather strict appearance. The flowers are creamy-white and the fruit globular rather than "oblong." In the N. Y. State Flora its blossoming time is said to be May and June, but the past summer the trees were yet in blossom on the fifteenth of July. It is greatly to be hoped that the owners of the land where these trees grow will not allow them to be destroyed. There are not many of them, and it is possible they may be the only wild representatives of the species in our State.

Arabis perfoliata *Lam.*

This rare plant still exists on the rocky banks of the Black river below Watertown, where it was found more than fifty years ago.

Buda rubra *Dumont.*

Hempstead Plains. July. A small form three or four inches high.

Hypericum Ascyron *L.*

This plant which is not common in our State has been found in Washington county. *Burnham.*

Erodium Cicutarium *L' Her.*

Fields near Schenectady. July. *Wibbe.*

Flörkea proserpinacoides *Willd.*

Near Syracuse. *Mrs. L. L. Goodrich.*

Vitis æstivalis *Max.* var. *bicolor* *Le Conte.*

Whitehall. July.

Polygala polygama *Walt.*

West side of Mount Defiance on thin soil covering rocks. June. A form having pale-pinkish flowers was collected near Riverhead; also near Amagansett. July.

***Polygala sanguinea* L.**

Alcove. September. A late flowering form springing up in meadows and having the flowers wholly bright-purple. The common form on Long Island, which was in blossom in July, has the flowers greenish-purple.

***Vicia sativa* L. var. *angustifolia* Ser.**

Adams. June.

***Vicia tetrasperma* L.**

Bethlehem. June. This introduced species of vetch is evidently not limited to places near the sea coast as indicated in the Manual.

***Vicia Cracca* L.**

Roadsides. Ticonderoga and Brownville. June.

***Rosa blanda* Ait.**

Rocky banks of the Black river below Brownville. June. The absence of spines in this species together with its glabrous peduncles and calyx tubes and its persistent sepals, makes it one of the most easily recognizable of our native roses. The stems often have a few prickles toward the base but so far as I have seen they are always glabrous above. The rose found near Westport and which, in this Report I have referred to *R. Sayi*, seems to be intermediate between this species and typical *R. Sayi*. Its fruit is similar to that of *R. blanda*, but its stems and often its branches are very prickly, its stipules which are either narrow or dilated are distinctly glandular-ciliate and its leaflets are more rounded at the base and their serratures occasionally serrulate. The prickly stems usually have slender spines interspersed among the prickles. For these reasons it seems rather to be a variety of *R. Sayi* than of *R. blanda*.

***Rosa Carolina* L.**

This is the only wild rose I have found in the heart of the Adirondack wilderness. It occurs along the inlets of Raquette lake and at Forked lake. It is in flower there in August. In one instance a tendency to the formation of double flowers was shown, the blossom having seven petals. The species occurs in all parts of the State. The fine serratures of the leaflets appear to be the

most available character for distinguishing this species from its allies. The stems are sometimes very prickly, especially when young.

Rosa lucida Ehrh.

“Margins of swamps or moist places” is given in the Manual as the habitat of this species. On Long Island it is not uncommon to find unmistakable forms of it growing in dry places and associated with *R. humilis*. The stout spines, which are either straight or curved, seem to be the most available character by which to distinguish it from *R. humilis*, but it must be confessed that intermediate forms occur which are perplexing. I have not observed prickles on the stem of this species, but they are sometimes present in *R. humilis*.

Amelanchier Canadensis T. & G.

A form of variety *rotundifolia*, three to six feet high, occurs in sandy soil near Karner. Variety *oblongifolia* also grows there, but generally with the leaves rounded or broadly oval. A dwarf form also occurs, three or four feet high and having three to six flowers in a raceme. The petals are short and narrow.

Sedum acre L.

Very plentiful about Brownville, growing in thin soil covering rocks.

Myriophyllum ambiguum Nutt.

Fisher's island, Suffolk county. Rev. J. L. Zabriskie. The small variety *limosum*.

Lythrum Salicaria L.

Head of Lake Champlain. July.

Cuphea viscosissima Jacq.

Vaughn's, Washington county. Burnham. This is an extension of its range northward.

Opuntia vulgaris Mill.

Specimens of an *Opuntia* found growing in sandy soil near the mouth of Peconic river, with few or no spines, short leaves and fruit not over an inch long appear to be referable to this species, to which they are referred in the State Flora.

***Galium pilosum* Ait.**

A small form six to nine inches high, with short internodes, leaves about half an inch long and flowers crowded in small dense clusters was collected on the north slope of Skylight mountain, one of the Adirondacks. It might be called variety *parvum*.

***Galium circæzans* Mx. var. *glabrum* Britton.**

Leaves and stems nearly glabrous; corolla glabrous. Whitehall, New Scotland and Sandlake. July.

***Solidago bicolor* L.**

A branching form, both of this and its variety *concolor*, is quite common. Each branch is terminated by a spike-like panicle of flowers.

***Solidago humilis* Pursh.**

Top of Bald mountain, near Third lake, Herkimer county. Four distinct forms of this species occur in this limited station. First, a very leafy dwarf form, four to six inches high with a short dense panicle one to two inches long. Second, a very leafy form eight to twelve inches high, with an oblong leafy interrupted but dense panicle. The margins of the lower leaves are often wavy toward the base. These forms make a very close approach to the Western var. *nana*. Third, a still taller form in which the stem is less leafy, the leaves are smaller, more narrow and scattered, and the panicle is elongated, narrow and spike-like, but commonly interrupted either in its entire length or toward the base only. This is one to two feet high. The upper leaves are entire, the lower and radical ones more or less bluntly serrate. The stem is either green or purple and is glabrous below. This is the most abundant form. The fourth form is like this in all respects except that it has a broader, more branched panicle. The panicles in all the forms are so glutinous that they adhere to the drying papers when placed in press.

It is a little remarkable that this species should exhibit such a variety of forms in such a limited locality. All the forms appeared to be growing under the same conditions of soil, temperature, moisture and exposure. I suspect this is the plant which in Paine's Catalogue is referred to *Solidago speciosa* var. *angustata*. It is separable from that species by its glutinous

panicle, more numerous rays and more narrow radical leaves. A large form of this species was collected on the gravelly bank at the outlet of the Lower Ausable pond. It is apparently the same as that credited in the Manual to the "base of the White Mountains."

***Solidago uliginosa* Nutt.**

In a "beaver meadow" about one mile southeast of the Forge House, Fulton Chain, a singular form of this species grows. The lower branches of the panicle are elongated and appressed, thus causing the panicle to take a pompon shape. In this locality the species was in blossom in August, and did not appear to be any earlier than *Solidago arguta*, *S. Canadensis*, *S. rugosa* and *S. lanceolata*, all of which were in flower there at the same time.

***Solidago rugosa* Mill.**

A variety *pallida*, having both ray and disk flowers a pale creamy yellow color, occurs at Shokan, Ulster county.

***Solidago nemoralis* Ait. var. *elongata* Pk.**

Abundant about Shokan.

***Aster Herveyi* Gray.**

Borders of woods. Blue Mountain lake and Voorheesville. August and September.

In the Manual this is indicated as an "ambiguous species" approaching *A. macrophyllus*. It is indeed liable to be mistaken for that species, at least in some of its forms, if I rightly understand it. In the New York specimens the branchlets and peduncles are glandular-hairy and the involucreal scales are glandular and the rays are violet as in *A. Herveyi*, though in some instances the color is pale violet. On the other hand, the leaves are not always lanceolate, but are sometimes ovate and distinctly serrate. They are also rough and rather thick as in *A. macrophyllus*. But this species, as described in the N. Y. State Flora, has a reddish-tawny pappus, while in our violet-rayed specimens the pappus is white or whitish, which is an additional reason for separating them from *A. macrophyllus* if this should prove to be a reliable character. It seems best, therefore, to consider them as a variety of *A. Herveyi*, and to

indicate their character thus: *Aster Herveyi* Gr. var. *intermedia* Pk. Branchlets and peduncles glandular-hairy; heads large; rays violet; involucre scales glandular, erect, all or all except the longer and more pointed inner ones, green or with green tips; pappus white or whitish; leaves rather thick and rough, ovate or lanceolate, the lower on naked petioles and more or less cordate, the upper sessile, the radical leaves large, broadly ovate-cordate, rough, on long naked petioles.

Apparently intermediate between typical *A. Herveyi* and *A. macrophyllus*. With this it has probably been confused, but from it it may be separated by the larger heads, color of the rays and pappus and glandular peduncles.

***Aster corymbosus* Ait.**

A pale, violet-rayed form with white pappus was obtained at Shokan. In general appearance it is quite like ordinary forms, but the color of the rays and of the pappus indicates a slight variation toward *A. Herveyi*.

***Aster cordifolius* L. var. *laevigatus* Porter.**

This variety, well-marked and easily recognized, though not indicated in the Manual, extends northward to Shokan, in the Catskill mountains.

***Aster laevis* L.**

West Albany. September. A form having rays nearly white. This is apparently the same or nearly the same as the white-rayed form found at Fort Edward by Dr. Vandenburg and mentioned in the Flora of North America. The color of the rays becomes a little more bluish-tinted in drying.

***Aster diffusus* Ait. var. *variifolius* n. var.**

Heads scattered, mostly on bracted peduncles one-half to one inch long; branches horizontally spreading or slightly ascending; leaves sharply serrate with prominent teeth, varying from very long and narrowly lanceolate to oblong-ovate, acuminate, the broadest ones abruptly narrowed towards the base as if into a widely margined petiole.

Sandlake and Catskill mountains. September.

In the Manual this species is described as having the leaves lanceolate or oblong-lanceolate, the lower somewhat serrate in

the middle. In our specimens all the leaves have very distinct serratures and they vary greatly in shape. Because of the scattered heads on long peduncles it seems to connect with *A. Tradescanti*, from which, as well as from *A. diffusus* var. *bifrons*, it differs in the character of its leaves.

***Aster prenanthoides* Muhl.**

This species which, in the N. Y. Flora, is credited to the western part of the State only, is abundant and variable in the Catskill mountains. The heads are corymbose or paniculate, the rays are white, bluish-white, violet or blue and the leaves vary from the typical ovate acuminate form with its long abrupt and conspicuously contracted base to a narrowly lanceolate form in which the basal contraction is scarcely noticeable. They vary in length from two and a half to six or seven inches. They are generally distinctly serrate, but in a form which seems sufficiently well marked to merit designation as variety *diffusifolius*, the serratures are less prominent, the leaves are shorter, widest in the middle and less abruptly contracted, so that in shape they are strongly suggestive of those of the ordinary form of *A. diffusus*. The paniculate heads are about three lines high and the scales are less spreading than in the type.

This variety seems to run into *A. prenanthoides* on one hand and into *A. puniceus* on the other. Its agreement with the description of *A. puniceus* var. *levicaulis* is very close, and I have not referred our specimens to this variety because of the character and arrangement of the hairs of the upper part of the stem and its branches and because of its apparently more close connection with *A. prenanthoides* in habitat size and appearance of the heads and shape of the leaves. The plants were associated in locality with both these species and may perhaps be a cross between them.

***Senecio aureus* L. var. *Balsamitæ* T. & G.**

Rocky bank of Black river below Brownville. June.

***Hieracium præaltum* Vill.**

This troublesome weed, recently introduced into the northern part of the State is rapidly spreading. It was found in three places near Adams, Jefferson county. It is evidently not par-

ticular as to soil or surroundings. It grows in sandy, clayey or gravelly soil, in places wet or dry, on naked ground or among grasses and exposed to the full rays of the sun or protected by the shade of trees. It already has a foothold in at least three counties

Vaccinium stamineum L.

The fruit of this species sometimes attains a diameter of five or six lines. Its flavor is similar to that of the cranberry for which it might be made a substitute.

Arctostaphylos Uva-ursi Spreng.

Abundant in sandy soil in the eastern part of Long Island.

Primula Mistassinica Mx.

This rare and local plant is still an inhabitant of the rocky cliffs along Fish creek above Taberg. Its flowers vary in color from white to pink or lilac.

Phlox divaricata L.

Near Sanford's Corners, Jefferson county. June.

Mimulus moschatus Dougl.

Near Middle Grove, Saratoga county. July. Wibbe.

Conopholis Americana Wallr.

Woods near Shokan.

Rumex verticillatus L.

Head of Lake Champlain growing in water two or three feet deep and emitting from the submerged joints of the stem numerous rootlets.

Polygonum amphibium L.

In the pond and river which form the outlet of the Fulton Chain of lakes, this species forms circular patches, which, from a little distance, might be taken for small islands. The plants are densely matted and in the central part of the patch they rise above the surface of the water and send up erect shoots, thus giving the aspect of an elevation in the center. Contrary to the Manual description, these plants have flower spikes from one to

three inches long as in *P. Muhlenbergii*. Nor are these always terminal, for the stem is sometimes prolonged or branched near the top in such a way as to leave the flower spikes lateral or axillary. I label the specimens var. *longispicatum*.

Polygonum acre *H. B. K.*

Sea shore near Amagansett. July. This is a form in which the leaf has a dark colored central spot.

Polygonum cilinode *Mx.*

A small form, variety *erectum*, eight to twelve inches high, was discovered on the top of Bald mountain. Not finding anything on which to climb it assumes an erect mode of growth. It is either simple or sparsely branched. Its behavior is in marked contrast to that of the woodbine, *Cissus Ampelopsis*, another climbing plant, which, when growing in places where it finds nothing on which to climb, trails over the ground.

Aplectrum hiemale *Nutt.*

This rare plant occurs sparingly near Vaughn's, Washington county. *Burnham*.

Habenaria lacera *R. Br.*

Border of woods. Selkirk. July. This is a peculiar form worthy of designation as var. *elongata*. Flower spike eight to ten inches long, bracts narrow, linear-lanceolate, the lower ones much longer than the flowers, segments of the corolla, longer and more slender than usual, the middle segment of the lip linear, scarcely widened at the tip.

Aletris farinosa *L.*

Abundant on Hempstead Plains in open fields. July.

Juncus tenuis *Willd.* var. *secundus* *Engelm.*

Riverhead and Amagansett. July. Blue Mountain lake. August. The branches of the panicle are not always incurved, but the second capsules give to the plant a very distinct appearance. Var. *congestus*, or its eastern analogue, was collected at Amagansett.

Juncus Greenii O. & T.

Riverhead, Amagansett and Hempstead Plains. July.

Juncus militaris Bigel.

Near Riverhead. July.

Scirpus polyphyllus Vahl.

Shandaken, Ulster county. Some of the plants emit leafy tufts or shoots among the rays after flowering.

Eriophorum cyperinum L.

Of var. *laxum* there is a form in which the spikelets are collected or crowded into a more or less dense somewhat gobular head. Blue Mountain slide. August. Sandlake. September. In the Sandlake specimens the spikelets are more tawny in color. It might be called form *condensatum*.

Scleria pauciflora Muhl.

Hempstead Plains. July.

Carex intumescens Rudge.

In the Manual this is said to have two fertile spikes. Specimens having three fertile spikes were collected at Blue Mountain lake; also in Alcove by Mr. Shear. They do not appear to be very unusual with us.

Carex lurida Wahl.

This species usually has but one staminate spike, but Dr. Howe finds, at Lansingburgh, specimens having two; a short one just below the base of the long one. In some instances the short one is pistillate at the apex. Variety *altior* was collected on Montauk Point. Dr. Howe also finds *Carex hystericina* with two staminate spikes. A small form of this species occurs near Adams. It has but one or two small and very short fertile spikes. In the latter case they are often very distant.

Carex torta Boott.

Three quite distinct forms of this species grow along Fish creek, near Taberg. In one the fertile spikes are long, loosely flowered at the base, and distant, and the lowest bract is long and leaf-like, much surpassing the spike and nearly equaling the culm in length. In the second the spikes are approximate with the bracts very slender and shorter than the spikes. In the third form the fertile spikes are shorter, about one inch long, more compactly flowered, approximate and erect or merely spreading. All are more or less staminate at the apex and the scale equals or exceeds the perigynium. The bracts are shorter than the spikes. This form approaches *Carex stricta* in appearance and is so well marked that I would call it var. *staminata*.

Carex Hitchcockiana Dew.

Slopes of Mt. Defiance. This is a few-flowered form having one to three perigynia in a spike, with the scales barely equaling, or shorter than the perigynia.

Carex Pennsylvanica Lam.

This is a very variable species, and some of the forms seem to be worthy of special designation, as forms if not varieties.

Form *bracteata*. Bract of the lowest spike green, elongated, generally exceeding its spike. Oak woods. Voorheesville.

Form *paleacea*. Scale large, ovate-lanceolate, longer than the perigynium. Sandy soil. Karner.

Variety *distans*. Fertile spikes four to eight lines apart. Sandy soil. Lerayville.

Variety *angustifolia*. Leaves very narrow, one-half to two-thirds of a line wide, mostly longer than the culm. Long Island.

This appears to be a good variety. By its narrow leaves it approaches *Carex varia* Muhl., but the character of the spikes and of the perigynia require its reference to *C. Pennsylvanica*. Form *bracteata* makes an approach toward *C. communis*.

Carex cephaloidea Dew.

Woods near Adams. June. Rare in the eastern part of the State.

Carex canescens L.

Montauk Point. July. This is a singular form in which the uppermost spike is wholly staminate or nearly so. I call it var. *staminata*.

Carex foenea Willd var. perplexa Bailey.

Rocky hills near Whitehall. July. In our specimens the spikes are distinctly narrowed at the base, the heads are sometimes slightly nodding and the inner face of the perigynium is less prominently nerved. They appear to approach more nearly *C. straminea*.

Carex tribuloides Wahl. var. Bebbii Bailey.

Lansingburgh. Howe. Variety *reducta* Bailey was collected at Blue Mountain lake in a form with the spikes aggregated in an oblong head, an inch or an inch and a half long. It might be called form *aggregata*.

Setaria Italica Kunth.

Raquette lake. A dwarf form with spikes scarcely half an inch long, apparently the result of an attempt to cultivate the Hungarian grass in a cold climate and an uncongenial soil.

Agrostis alba L. var. minor Vasey.

Lansingburgh. Howe. A form closely resembling this in external appearance, but having an awn as long as the flower and a palet about one-fourth as long as the flowering glume, was collected at Riverhead. It is well marked by the awn, which rises near the base of the flower and is somewhat bent in the middle, but other forms also have the same kind of an awn, notably the one which in the Flora of New York is referred to *A. stricta*.

Calamagrostis Canadensis Bv.

In the Adirondack region this common grass often has the panicle contracted both before and after flowering.

Trisetum subspicatum Bv. var. molle Gr.

Abundant on the rocky banks of Black river below Brownville. June.

Poa serotina Ehrh.

On dry rocky hillsides near Whitehall is a form having panicles of comparatively few two-flowered spikelets.

Glyceria nervata Trin.

Woods near Adams. June. This is a leafy form with small green flowers and spikelets for which Dr. Vasey suggests the name var. *parviflora*.

Glyceria grandis Wats.

Whitehall. July. A form with green spikelets. It grew in the shade.

Aspidium spinulosum Sw.

The typical form of this fern is said to be rare in this country. It is very abundant near the top of Blue mountain. August.

Lygodium palmatum Sw.

McDonough, Chenango county. Mrs. D. B. Fitch. This is the second station in which this fern has been found in our State.

Botrychium ternatum Sw.

Alcove. Shear. A singular form with two fertile fronds.

Amanita muscaria L. var. alba Pk.

This variety is common about Alcove. Shear. It also occurs on Long Island in two forms, the normal one and a smaller one in which the warts of the pileus are evanescent or wanting. Not infrequently it makes a close approach to white forms of *A. pantherina*, in having the upper part of the bulb uniformly margined by the remains of the definitely circumscissile volva, but this margin is more acute than in that species.

Armillaria mellea Vahl.

There seems to be no end to the variations of this most polymorphous species. A well marked variety, var. *bulbōsa*, has the stem rather short and terminating below in a large bulb. Two

patches of this variety were found near Shokan. The plants were growing on the ground under hemlock trees, *Tsuga Canadensis*, and were generally cæspitose. There were scores of these tufts and in all, the plants had bulbous stems. This is the direct counterpart to var. *radicata*, in which the stem ends below in a long root-like point which penetrates the earth deeply, and resembles the tap-root of *Collybia radicata*. Varieties *obscura flava* and *glabra* of Gillet all occur in our State, and to these may be added also var. *albida* Pk. in which the pileus is white or whitish. I have also received from Dr. Taylor of Washington, D. C., and from Dr. Jelliffe of Brooklyn, a densely cæspitose, slender-stemmed form with no annulus, it being evanescent or entirely wanting. This I call var. *exannulata*. It is scarcely distinguishable from *Clitocybe aquatica* Banning, and *Clitocybe monatelpha* Morg., which, I suspect, will yet have to be referred to this species. According to Quelet, *Clitocybe socialis* DC., and *Agaricus gymnopodius* Bull, also probably belong here.

The abortive form often associated with *A. mellea* and in no way distinguishable from the abortive form of *Clitopilus abortivus*, has a farinaceous taste, but this is lost in cooking. When cooked and properly seasoned this abortive form is quite as well-flavored and as good to eat as the normal form.

***Armillaria viscidipes* Pk.**

This fine large species was found near Shokan, growing on the banks of a stream. The stem sometimes penetrates the earth quite deeply and the annulus at first conceals the lamellæ.

***Tricholoma terreum* Schæff.**

Var. *atrosquamosum* (*T. atrosquamosum* Chev.), occurs near Shokan.

***Tricholoma fumescens* Pk.**

Fine specimens of this rare species were found near Shokan. The plants sometimes attain a size considerably larger than the dimensions of the typical form, the pileus being even two or three inches broad and the stem six lines thick. The taste is at first farinaceous, then sweetish. The lamellæ in the dried specimens are almost as black as in mature *Agaricus campester*.

Pholiota discolor *Pk.*

Var. *minor*. Small; pileus 6 to 10 lines broad, chestnut color when young or moist; stem about 1 line thick, at first clothed with whitish fibrils. Among mosses about or on the base of stumps. Shokan. September.

Galera teneroides *Pk.*

This species is not rare in the Adirondack woods. It often grows on decaying wood and branches. The color, though approaching that of *G. tener*, is more dull or brownish both when moist and when dry. The moist pileus is sometimes striatulate almost to the disk.

Agaricus silvicola *Vitt.*

The New York specimens heretofore referred to this species differ in some respects from the European plant if we may rely upon the published descriptions. The stem is quite constantly abruptly bulbous at the base, and the annulus is usually double, the lower or exterior one being of a floccose texture, smaller and split in a radiating manner as in that of *A. arvensis*. The very young lamellæ are also whitish as in that species and wounds or bruises of the flesh are apt to become yellowish, all of which indicate a closer affinity in our plant to *A. arvensis* than to *A. campester*. It seems to me, therefore, that greater scientific accuracy will be attained by referring our plant to *A. arvensis* as a var. *abruptus*, and considering it distinct from the European *A. silvicola*, which is described as having a simple annulus and which is figured as having the stem slightly and gradually thickened at the base. The name *abruptus* will indicate the character of the bulb in our plant. I have made trial of its edible qualities and find it very good eating, though scarcely as highly flavored as the common mushroom.

Psilocybe squalidella *Pk.*

Var. *cæspitosa*. Densely cæspitose; pilei often irregular from mutual pressure, firm but flexible and elastic, pale-alutaceous or watery-brown when moist, ochraceous or reddish-yellow when dry; stem subcartilaginous, somewhat fibrous, stuffed or hollow, frequently wavy, reddish-brown or rufescent, paler at the top,

especially when young, usually with a dense whitish or gray villosity at the base.

In wet places. Shokan. September.

The typical form of the species was referred to *Hypholoma*, but the absence of any well-developed veil and the subcartilaginous texture of the stem indicate that its true place is in *Psilocybe*, in the vicinity of *P. spadicea*.

***Cortinarius pulchrifolius* Pk.**

Delmar and Shokan. September. This rare species, which is well-marked by the peculiar color of the young lamellæ which resembles that of the lamellæ of *Clitocybe laccata* or *C. ochropurpurea*, was discovered on Long Island in 1880, but until this year I had not observed it again. The filaments of the veil are sometimes very opious.

***Paxillus involutus* Fr.**

In the uncooked state this fungus has a harsh unpleasant flavor, but it loses this to a great extent in cooking. The flesh also assumes a dark color in cooking, for which reason, together with its want of delicious flavor, I should class it as a second-rate edible species.

***Boletus affinis* Pk.**

Sandy soil. Amagansett. July. This has been tested as to its esculent properties. It has an agreeable flavor and is moderately tender. The flesh is white, at first firm but becoming softer with age. The color of the pileus also becomes paler with age.

***Polyporus circinatus* Fr.**

Var. *proliferus*. Like the typical form but having one or more pilei developed from the upper surface of the first one. Fulton Chain. August.

***Polyporus cuticularis* Fr.**

Standing trunk of maple, *Acer saccharinum*. Shokan. September. The incurved margin of the pileus is a very noticeable and good distinguishing feature of this species.

***Polyporus sulphureus* Fr.**

If taken when fresh and young, before the pores have formed, and carefully cooked, this fungus makes a very palatable dish.

Trametis Sepium Berk.

This species often occurs in a resupinate form, which, when growing in the woods, is sometimes several inches in extent. The pileate form is generally very narrow though sometimes greatly elongated laterally by the confluence of several individuals.

Stereum complicatum Fr.

Var. *laceratum*. Margin of the pileus lacerated or multifid. Shokan. September.

Pterula setosa Pk.

Dr. Patouillard has founded a new genus, *Hirsutella*, to which he has transferred this species. He also transfers *Thelephora pedicellata* Schw. to a new genus, *Septobasidium*.

Comatricha aqualis Pk.

Mr. Geo. Masee, in his Monograph of the Myxogastres, concludes that the genus *Comatricha* is so intimately connected with the genus *Stemonitis* that it is untenable. He therefore places this and other species of *Comatricha* in *Stemonitis*. This species is sometimes abundant on decaying wood of sugar maple in the Adirondack forests. The thin fugacious walls of the sporangia have a silvery luster.

Trichia reniformis Pk.

Bark of striped maple, *Acer Pennsylvanicum*. Fulton Chain. August. A rare but well-marked and very distinct species. The clustered or subcæspitose mode of growth, the brown color of the peridia and the short elaters are peculiar features. It has also occurred at Karner on bark of red maple, *Acer rubrum*.

Didymium microcarpum. Rost.

An apparent variety of this species has spores a little larger than in the type and on smooth surfaces the stem rises from a circular hypothallus, which is adorned with radiating lines as in *D. radiatum*.

Chrysomyxa Pyrolæ Rostr.

Living leaves of *Pyrola chlorantha*. Delmar. June. The uredo form on this host has the sori much more scattered than on the leaves of *Pyrola rotundifolia*.

Plowrightia morbosa Sacc.

This noxious fungus is subject to considerable variation in its behavior and in its time of fruiting. Specimens were collected on choke cherry, *Prunus Virginiana*, near Karner, May 16th, in which conidia and ascospores were both present in abundance. Conidia-bearing excrescences were also found which were evidently due to the sowing of spores, as they were alone on branches containing no others. These probably were due to last year's sowing of spores, for if of the present year's sowing they must have developed with unusual rapidity. Specimens of this fungus were also collected on the wild red cherry, *Prunus Pennsylvanica*, on the slopes of Blue mountain. The excrescences were mostly single on the branches and gave no evidence of a disposition to spread by the extension of the mycelium. In many cases the affected branch was already dead or in a dying condition, in which cases there would, of course, be no spread of the disease by the mycelium.

Cryptospora suffusa Tul.

Var. *nuda*. Stroma not suffused with a yellowish dust. On dead stems of alder and hazel-nut. Karner and West Albany. The black circumscribing line is also apparently absent in some cases.

(F.)

NEW YORK SPECIES OF PLUTEOLUS.

Pluteolus Fr.

Pileus slightly fleshy, conical or campanulate, then expanded, viscid, the margin at first straight, appressed to the stem; stem subcartilaginous, distinct from the hymenophorum; lamellæ rounded-free. *Hym. Europ.*, p. 266.

This genus corresponds to the genus *Pluteus* in the pink-spored series. The species are similar in structure to the species of that genus, but they differ somewhat in the character of the stem and in the color of the lamellæ and spores. Its species were separated by Fries from the genus *Galera* because of their viscid pileus and free lamellæ. I have included in it two species formerly referred to *Galera* by me. They are *Galera expansa*

and *G. callista*. They do not quite fully meet the requirements of the generic character inasmuch as their lamellæ are not entirely free, but in other respects, and especially in the viscid pileus, they agree better with this genus than with *Galera*. The attachment of the lamellæ to the stem is very slight, but just enough to show the intimate relationship of the two genera.

SYNOPSIS OF THE SPECIES.

- | | |
|---|----------------------|
| Lamellæ wholly free..... | 1 |
| Lamellæ slightly adnexed..... | 2 |
| 1. Plant growing on dung or rich soil..... | <i>coprophilus</i> . |
| 1. Plant growing on decaying wood..... | <i>reticulatus</i> . |
| 2. Plant growing on damp soil in exsiccated water holes..... | <i>callistus</i> . |
| 2. Plant growing on decaying wood or rich soil... | <i>expansus</i> . |

Pluteolus coprophilus *n. sp.*

DUNG-LOVING PLUTEOLUS.

Pileus thin, submembranous, fragile, conical or campanulate, becoming nearly plane, somewhat viscid when moist, finely striate on the margin, pinkish-grey; lamellæ narrow, crowded, free, pale cinnamon; stem long, straight or somewhat flexuous, hollow, white, sometimes tinged with pink; spores elliptical, dark-ferruginous, .0005 to .0006 in. long, about .0003 in. broad.

Pileus 1 to 1.5 in. broad; stem 2 to 3.5 in. long, 1 to 2 lines thick.

Dung heaps. Albany and Warren counties. May and June.

The plants sometimes are caespitose. The striations of the pileus are similar to those of *Galera lateritia*, from which this species is separated by its more expanded viscid pileus, different color and free lamellæ.

Pluteolus expansus *Pk.*

EXPANDED PLUTEOLUS.

(*Galera expansa* Pk. Twenty-sixth State Mus. Rep., p. 58.)

Pileus submembranaceous, becoming nearly plane or centrally depressed, viscid, plicate-striate on the margin, brownish-ochraceous, often tinged with yellow, grey, pink or greenish hues; lamellæ narrow, close, rounded behind, slightly adnexed, pale

cinnamon or ferruginous; stem rather long, slender, fragile, equal or slightly tapering upward, hollow, faintly striate, pruinose, yellow or greenish-yellow; spores .00045 to .0005 in. long, .00025 to .0003 broad.

Pileus 1 to 1.5 in. broad; stem 3 to 4 in. long, 1 to 2 lines thick.

Decaying wood and rich ground. Onondaga and Rensselaer counties. June to August.

Var. *terrestris*. Pileus grayish-yellow, tinged with green, stem greenish-yellow. Growing on rich or well-manured soil. The plicate striations of the pileus are similar to those of *Galera flava* and *G. coprinoides*. The species has been removed to this genus because of the viscosity of the pileus, nevertheless it must be confessed that such a feature is scarcely satisfactory for generic distinction.

Pluteolus callistus Pk.

MOST BEAUTIFUL PLUTEOLUS.

(*Galera callista* Pk. Twenty-sixth State Mus. Rep., p. 59.)

Pileus thin, expanded, subumbonate, smooth, viscid, striatulate on the margin, olivaceous or ochraceous, the umbo bright chestnut color; lamellæ thin, close, ventricose, adnexed, easily separating from the stem, yellowish becoming bright ferruginous; stem equal, hollow, pruinose, yellow; spores elliptical, .00035 to .0004 in. long, .0002 to .00025 broad.

Pileus 6 to 10 lines broad; stem 1 to 1.5 in. long, .5 line thick.

Exsiccated water holes in low swampy woods. Lewis county. September.

This pretty little agaric was discovered in 1872, but has not since been rediscovered. It may, therefore, be regarded as very rare. In the dried specimens the lamellæ are white on the edge, and the pileus has assumed a dull metallic green color. The species is placed in this genus because of its expanded and viscid pileus.

Pluteolus reticulatus Pers.

RETICULATED PLUTEOLUS.

(Hym. Europ., p. 266. Sylloge vol. v., p. 859.)

Pileus slightly fleshy, campanulate, then expanded, viscous, reticulate with anastomosing veins, pale violaceous, striate on the margin; lamellæ free, ventricose, crowded, saffron-ferruginous;

stem hollow, fragile, fibrillose, mealy at the top, white; spores elliptical, ferruginous, .0004 to .0005 in. long, .0002 to .00025 broad.

Pileus 1 to 2 in. broad; stem 1 to 2 in. long, 1 to 2 lines thick. Decaying wood. Cattaraugus county. September.

The specimens which I have referred to this species appear to be a small form with the pileus scarcely more than an inch broad and merely rugose on the disk, not distinctly reticulate as in the type. In the dried specimens the pileus has assumed a dark violaceous color. The dimensions of the spores have been taken from the American plant. I do not find them given by any European author.

NEW YORK SPECIES OF GALERA.

Galera Fr.

Veil none or fibrillose. Stem subcartilaginous, continuous with the hymenophorum, tubular. Pileus more or less membranaceous, conical or oval, then expanded, striate, the margin at first straight and appressed to the stem. Lamellæ not decurrent. *Hym. Europ.*, p. 266.

The species of this genus are small and mostly rather fragile. The pileus is thin and when young is conical, oval or bell-shaped, but in some at least, it becomes expanded with age. When young or moist it has a watery, or hygrophanous appearance, and is then either striate or striatulate because of its thinness. The colors are either whitish, yellow, ochraceous, cinnamon or ferruginous in nearly all of our species, but owing to the hygrophanous character these generally become paler in the dry plant. The lamellæ are commonly yellowish, tawny, cinnamon or ferruginous. The stem is slender, often straight, fragile and hollow and colored like the pileus. The genus holds the same place in the ochraceous-spored series that *Mycena* holds in the white-spored series and *Nolanea* in the pink-spored series. Some grow on dung or in rich grassy, ground, others are found in woods, either on naked soil or on decaying leaves, wood or branches and others still occur habitually in wet or damp places among *Sphagnum* or other mosses.

The species have been arranged by Fries in three groups or sections. Of the first section we have six representatives, of the second, three, and of the third, one. An additional section has been formed which contains two species. One-half of our twelve species appear to be peculiar to this country.

SYNOPSIS OF THE SPECIES.

| | |
|--|--------------|
| Plants growing among mosses..... | 1 |
| Plants not growing among mosses..... | 4 |
| 1. Pileus commonly 4 to 6 lines broad..... | 2 |
| 1. Pileus commonly 9 to 12 lines broad..... | Sphagnorum. |
| 2. Margin of the pileus naked or not fibrillose..... | 3 |
| 2. Margin of the pileus adorned with white fibrils... rufipes. | |
| 3. Stem pruinose at the top..... | Hypnorum. |
| 3. Stem naked at the top..... | aquatilis. |
| 4. Plant growing on dung or in grassy places..... | 5 |
| 4. Plant growing in uncultivated places..... | 8 |
| 5. Pileus plicate-sulcate..... | coprinoides. |
| 5. Pileus not plicate-sulcate..... | 6 |
| 6. Pileus ferruginous when moist..... | ovalis. |
| 6. Pileus paler, yellowish or tawny-cinnamon when moist.. | 7 |
| 7. Pileus narrowly conical, striate when dry..... | lateritia. |
| 7. Pileus broadly conical, not striate when dry..... | tener. |
| 8. Plant growing on hulls of buckwheat..... | sulcatipes. |
| 8. Plant having some other habitat..... | 9 |
| 9. Pileus pale-yellow..... | flava. |
| 9. Pileus some other color..... | 10 |
| 10. Lamellæ narrow, close..... | teneroides. |
| 10. Lamellæ broad, subdistant..... | inculta. |

CONOCEPHALE. Pileus conic-campanulate, hygrophanous, nearly even, when dry sprinkled with soft atoms; stem straight; lamellæ ascending, inserted in the top of the cone, somewhat crowded. Veil none.

Galera lateritia Fr.

BRICK-RED GALERA.

(Hym. Europ., p. 237. Sylloge Vol. v, p. 860.)

Pileus thin, narrowly conical or acorn-shaped, often becoming campanulate, hygrophanous, yellowish when moist, whitish or ochraceous when dry, finely striate on the margin; lamellæ

narrow or linear, crowded, ascending, nearly free, pale-cinnamon or tawny-ferruginous; stem straight, slender, fragile, hollow, minutely striate, sprinkled with minute mealy particles or clothed with a minute villosity, white; spores elliptical, ferruginous, .0005 to .00055 in. long, .0003 to .00035 broad.

Pileus 6 to 12 lines broad; stem 2 to 3 in. long, scarcely 1 line thick.

Dung or rich grassy ground. Albany and Rensselaer counties. June to September.

This may be separated from the next following species by its more elongated narrowly conical pileus distinctly striate on the margin and by its narrower linear lamellæ. The striations are fine and close and often reach half way to the center of the pileus. In our specimens they are distinct even in the dried plant. We have seen no specimens having the pileus as dark colored as in the Friesian figure of the moist plant, but many of our American agarics are paler or have paler forms than the European figures indicate for the same species. The hygrophanous character of the pileus is less clearly shown than in *Galera tener*. As in that species, there are forms in which both pileus and stem are clothed with a minute downy pubescence. When partly dry the pileus feels sticky when pressed between the thumb and fingers.

***Galera tener* Schæff.**

TENDER GALERA.

(Hym. Europ., p. 267. Sylloge Vol. v, p. 860.)

Pileus thin, conical broadly and obtusely conical or campanulate, hygrophanous, pale-ferruginous or tawny-cinnamon color and striatulate when moist, whitish or creamy-yellow when dry, often sprinkled with shining atoms; lamellæ broad, rather close, ascending, adnate, cinnamon color; stem straight, slender, fragile, hollow, somewhat shining, commonly finely striate, colored like the pileus; spores elliptical, dark ferruginous, almost rubiginous, .0005 to .00065 in. long, .0003 to .0004 broad.

Pileus 4 to 10 lines broad; stem 1.5 to 3 in. long, scarcely 1 line thick.

Dung and rich grassy ground. Common. June to September.

This is our most common species of *Galera*. It sometimes grows in great abundance where cattle have been yarded and in

rich lawns or pastures. It is often found growing on dung in company with *Panaeolus campanulatus*. It varies much in size. A small form, form *minor*, occurs having the pileus hemispherical and only three or four lines broad.

Var. *pilosella* (*Agaricus pilosellus* Pers.), has both pileus and stem clothed with a minute erect pubescence when moist. A form is sometimes found in which the center of the pileus is brown or blackish-brown.

Galera teneroides Pk.

WOOD-LOVING GALERA.

(Twenty-ninth State Museum Report, p. 39.)

Pileus thin, campanulate or expanded, hygrophanous, brownish-cinnamon and striatulate when moist, paler when dry; lamellæ narrow, close, yellowish-cinnamon; stem straight, slender, hollow, colored like the pileus; spores nearly elliptical, subluteus, .0003 to .00035 in. long, .00016 to .0002 broad.

Pileus 6 to 12 lines broad; stem 1 to 2 in. long, about half a line thick. Ground, dung and decaying wood and branches in woods. Adirondack mountains and in Albany county. June to September.

This species is closely related to *Galera tener* as may be inferred from the name, but it is nevertheless distinct in its more brown or smoky-tinted color, more expanded mature pileus, more narrow lamellæ and smaller paler spores.

Galera ovalis Fr.

OVAL GALERA.

(Hym. Europ., p. 263. Sylloge Vol. v, p. 862.)

Pileus somewhat membranaceous, oval or campanulate, hygrophanous, brownish-ferruginous and obscurely striatulate on the margin when moist, paler and even when dry, fragile; lamellæ nearly free, very broad, ventricose, ferruginous; stem straight, slender, hollow, slightly striate, colored nearly like the pileus; spores elliptical, dark-ferruginous, .0004 to .0005 in. long, .00025 to .0003 broad.

Pileus 8 to 12 lines broad; stem 3 to 4 in. long, about 1 line thick.

Dung. Albany county. June.

The specimens which I have referred to this species were collected many years ago. I have not found any like them since. They differ from *Galera tener* chiefly in their larger size and darker color, both when moist and when dry. The species is evidently a very rare one.

***Galera sulcatipes* Pk.**

SULCATE-STEMMED GALERA.

(Thirty-fifth State Mus. Rep., p. 132.)

Pileus thin, ovate, conical or subcampanulate, hygrophanous chestnut-colored and mostly striatulate on the margin when moist, paler when dry; lamellæ ascending, subdistant, adnate, whitish becoming ferruginous-cinnamon; stem slender, straight or flexuous, equal, hollow, rather tenacious, striate-sulcate, silky, floccose-pruinose toward the base, white; spores elliptical, ferruginous-cinnamon, .00025 to .0003 in. long, .00016 broad.

Pileus 5 to 8 lines broad; stem 1.5 to 3 in. long, about 1 line thick.

Gregarious on a pile of buckwheat bran lying on the ground in woods. Albany county. August.

The white and almost shining stem is striate and silky above, pulverulent or floccose-pruinose toward the base where it generally assumes a greenish-blue color if handled when moist. The pileus fades in drying to subochraceous. The lamellæ are sometimes white on the edge. Found in 1881 but not detected since. A rare species but very distinct in the character of its stem and in its peculiar habitat.

***Galera inculta* Pk.**

RUDE GALERA.

(Forty-first State Mus. Rep., p. 69.)

Pileus thin, somewhat fragile, campanulate, then convex or nearly plane, obtuse or rarely with a small umbo, hygrophanous, cinnamon color and striatulate when moist, buff color and atomate when dry, sometimes minutely pitted or corrugated, rarely rimose-squamulose; lamellæ broad, subdistant, ventricose, adnexed, white crenulate on the edge, at first pallid, then pale-cinnamon; stem straight or subflexuous, hollow, brittle, slightly silky, reddish-brown, sometimes mealy or pruinose at the top and

white-villose at the base; spores subelliptical, pointed at each end, brownish-ferruginous, .0006 to .0005 in. long, .0003 broad.

Pileus 6 to 12 lines broad; stem 1 to 1.5 in. long, .5 to 1 line thick.

Damp ground under willows and alders. Catskill mountains. September.

The moist pileus resembles in color that of the small glabrous striatulate form of *Clitocybe laccata*, the dry one that of *Galera tener*. The specimens were found growing with *Naucoria paludosa*, from which they may be distinguished by the more campanulate pileus, the broader and more distant lamellæ and the larger spores.

BRYOGENÆ. Pileus membranaceous, campanulate, striate, glabrous, hygraphanous, even when dry, opaque, slightly silky; stem thin, lax, flexile; lamellæ broadly and plainly adnate, broad, subdenticulate. Slender, growing among mosses, the veil very fugacious.

Galera aquatilis Fr.

AQUATIC GALERA.

(Hym. Europ., p. 270. Sylloge Vol. v, p. 869.)

Pileus membranaceous, campanulate or convex, glabrous, watery, hygrophanous, pallid-honey color and striatulate on the margin when moist, soft and whitish when dry, often with a yellowish papilla; lamellæ distant, triquetrous, plane, adnate, pallid; stem very long, slender, even, glabrous, whitish or yellowish; spores elliptical, .0004 in. long, .00024 broad.

Pileus 5 to 6 lines broad; stem (in our specimens) 2 to 3 in. long, scarcely 1 line thick.

Among mosses in wet places. Catskill mountains. July. A rare species. In our specimens the stem is less elongated than in the European plant.

Galera Sphagnorum Pers.

SPHAGNUM GALERA.

(Hym. Europ., p. 270. Sylloge Vol. v, p. 869.)

Pileus thin, conical convex or expanded, sometimes with a small umbo or papilla, hygrophanous, tawny or subochraceous and usually striatulate on the margin when moist, pale-ochraceous or buff when dry; lamellæ thin, subdistant, tawny-ochraceous;

stem slender, hollow, more or less fibrillose, subflexuous, colored like the pileus; spores elliptical or subovate, .0004 to .0005 in. long, .00025 to .0003 broad.

Pileus 6 to 12 lines broad; stem 2.5 to 5 in. long, 1 to 1.5 lines thick.

In marshes among Sphagnum. Fulton, Rensselaer and Seneca counties and Adirondack mountains. June to August.

This is easily distinguished from *Galera Hypnorum*, to which it has sometimes been subjoined as a variety, by its larger size, more expanded pileus, fibrillose stem and peculiar place of growth. There is a notable form with a well-developed veil which may be designated var. *velata*. Veil white, webby or almost membranous, breaking up on the upper part of the stem and forming floccose scales, often evanescent with age. In this variety the moist pileus is sometimes chestnut color or bay red, being darker than in the ordinary forms of the species. Very often the fibrils of the stem are grouped in flakes or patches in such a way as to give a wavy appearance to the stem itself.

***Galera Hypnorum* Batsch.**

HYPNUM GALERA.

(Hym. Europ., p. 270. Sylloge Vol. v, p. 868.)

Pileus membranaceous, conical or campanulate, obtuse or papillate, glabrous, hygrophanous, watery-cinnamon or subochraceous and striatulate when moist, paler when dry, often fading to yellowish or buff; lamellæ broad, adnate, ventricose, distant, tawny or cinnamon color, often whitish flocculose on the edge; stem slender, hollow, flexuous, smooth, pruinose at the top, commonly colored like the pileus; spores elliptical, .0004 to .0005 in. long, .00024 to .0003 broad.

Pileus 3 to 6 lines broad; stem 1 to 2 in. long, less than a line thick.

Among mosses in woods, either on the ground or on prostrate decaying trunks. Common in hilly or mountainous districts. June to September.

This is a small species but it varies considerably in size and color. Var. *nigripes* has a blackish-brown stem.

ERIODERMÆ. Pileus submembranaceous, the veil manifest, superficial, separating, at first silky or squamulose, especially on the margin.

Galera rufipes Pk.

REDDISH-STEMMED GALERA.

(Forty-second State Mus. Rep. p. 20. Botanist's Edition.)

Pileus campanulate or convex, hygrophanous, reddish-tawny and striatulate when moist, whitened on the margin by the remains of the white fibrillose veil, pale-ochraceous when dry; lamellæ broad, subdistant, emarginate, yellowish or subochraceous, slightly crenulate on the whitish edge; stem slender, hollow, slightly fibrillose below, pruinose at the top, reddish-brown; spores elliptical, subochraceous, .00025 to .0003 in. long, .00016 to .0002 broad.

Pileus 4 to 6 lines broad; stem about 1 in. long, .5 line thick.

Mossy ground in woods. Essex county. September.

This species is easily separated from *Galera Hypnorum* by the whitened fibrillose margin of the pileus and by its smaller spores.

PLICATELLÆ *sec. nov.* Pileus membranous, conical or campanulate, more or less expanded in maturity, plicate-striate.

The two species here described differ so much in the character of the pileus and its striations from the other species of the genus that I have thought it best to institute a new Section for their reception. I find no description of any similar European species. They are probable peculiar to this country.

Galera flava Pk.

PALE-YELLOW GALERA.

(Forty-fifth State Mus. Rep., p. 19.)

Pileus membranous, ovate or campanulate, moist or subhygrophanous, obtuse, plicate-striate on the margin, yellow; lamellæ thin, narrow, crowded, adnate, at first whitish, then yellowish-cinnamon; stem equal or slightly tapering upward, hollow, slightly striate at the top, sprinkled with white mealy particles, white or yellowish; spores ovate or subelliptical, brownish-ferruginous, .0005 in. long, .0003 broad.

Pileus 6 to 12 lines broad; stem 2 to 3 in. long, 1 to 1.5 lines thick.

Damp vegetable mold in woods. Tompkins county. July.

This species is well marked by the pale-yellow color of the pileus and its plicate striations which are very distinct even in

the dried specimens. They extend half way to the disk or more. When dry the pileus is seen to be sprinkled with shining atoms as in some other species of the same genus. Occasionally the yellow cuticle cracks into squamules or small scales.

Galera coprinoïdes Pk.

COPRINUS-LIKE GALERA.

(Twenty-sixth State Mus. Rep. p. 59. *Agaricus plicatellus* Twenty-ninth Rep. p. 66.)

Pileus membranous, campanulate, soon expanded, often split on the margin, plicate-sulcate to the small even disk, yellowish or ochraceous-yellow; lamellæ narrow, close, rounded behind, colored like the pileus; stem slender, equal, hollow, minutely hairy or pruinose, white; spores elliptical, .00028 to .0003 in. long, .0002 broad.

Pileus about 6 lines broad; stem about 1 in. long, half a line thick.

Grassy ground. Cayuga county. August.

This small plant was discovered in 1872, but I have not found it since. It is manifestly very rare. The structure of the pileus and its plications are strongly suggestive of the character of the pilei of some of the small species of *Coprinus*, as is indicated by the name.

The name *Agaricus plicatellus* was substituted for *Agaricus coprinoïdes* when it was found that the latter name had been previously applied to another species, but since the former sub-genus *Galera* has been raised to generic rank it permits the restoration of the original specific name.



[FROM THE 47TH REPORT OF THE NEW YORK STATE MUSEUM OF NATURAL HISTORY.]

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ANNUAL REPORT
OF THE
STATE BOTANIST
OF THE
STATE OF NEW YORK. 1893.

Made to the Regents of the University, Pursuant to
Chapter 355 of the Laws of 1883.

BY CHARLES H. PECK.

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IN SENATE,

JANUARY, 1894.

ANNUAL REPORT.

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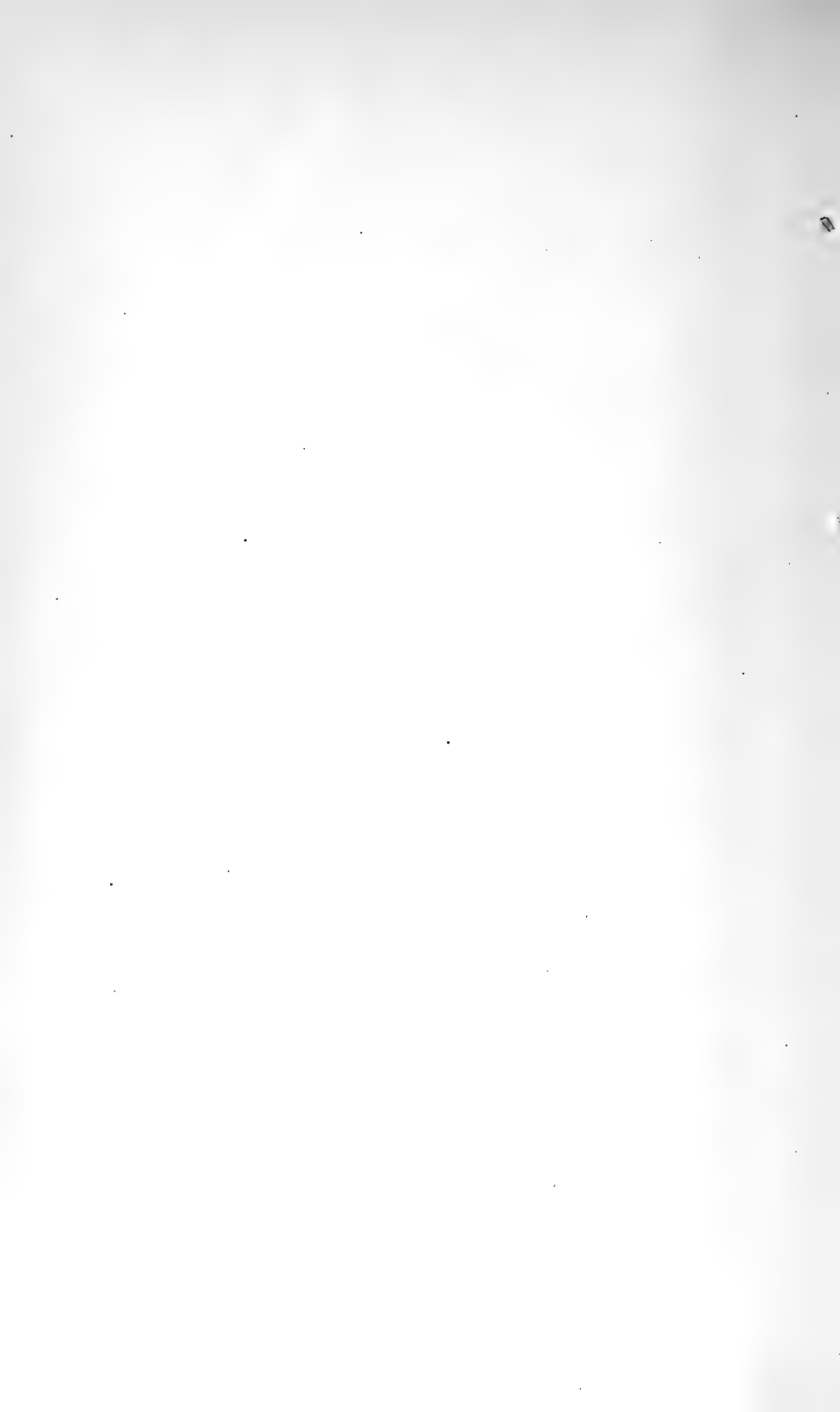
OFFICE OF THE STATE BOTANIST, }
ALBANY, *January*, 1894. }

*To the Honorable the Regents of the University of the State
New York:*

I have the honor to present to you my annual report for
the year 1893.

Very respectfully.

CHARLES H. PECK.



REPORT.

To the Honorable the Regents of the University of the State of New York:

GENTLEMEN.—I have the honor of communicating to you the following report:

Specimens of plants to represent the flora of the State in the Herbarium of the State Museum have been collected by the Botanist during the past season in the counties of Albany, Cayuga, Dutchess, Essex, Herkimer, Jefferson, Oneida, Onondaga, Rensselaer, Saratoga, St. Lawrence and Sullivan.

Specimens contributed by correspondents were collected in the counties of Albany, Erie, Essex, Kings, St. Lawrence, Suffolk, Richmond and Tompkins.

Specimens of 261 species of plants have been added to the Herbarium of which 245 were collected by the Botanist and 16 were contributed.

Of the added plants 40 belong to species not before represented therein and of these 11 are deemed new species. The remaining specimens, though not representing species new to the Herbarium, are intended to make more complete and satisfactory the exhibit of the species to which they belong.

A list of the species of which specimens have been added is marked A.

Specimens have been contributed to the Herbarium by 15 contributors. Some of these are plants found beyond our limits but they are valuable for reference, comparison and study. A list of the contributors and of their respective contributions is marked B.

A record of species not before reported, together with their localities, time of collection, descriptions of new species and other matters of interest, also descriptions of a few extralimital species of which specimens were sent for identification, will be found marked C.

A record of observations on species previously reported, remarks concerning them and descriptions of new or peculiar forms or varieties will be found under D. An inspection of this part of the report will show that more attention than usual has been given to the study of the variations in our flowering plants and that there are many deficiencies in the descriptions of the Manual. The study of these variations and their causes is a most interesting one and is not without its practical value. It is necessary to give us a more complete knowledge of the limits and behavior of species and to enable us to write complete and satisfactory descriptions of them. It is noticeable that most of our cultivated plants are very variable. By cultivation, selection, crossing and close pollination the natural variations have been fixed and even intensified so that we have varieties apparently as distinct as species themselves. Differences in soil, climate, degrees of moisture and prevailing temperature appear to be causes of variation in some cases but these external influences are not sufficient to explain all cases of variation. For example in a low strip of land lying along the railroad near Narrowsburg, five distinct forms or varieties of the common racemed loosestrife were found. These, so far as could be ascertained, all grew in the same kind of soil and subject to the same external conditions.

In a single patch of the bland or early wild rose growing near the station at Cooperstown Junction although the patch was but a few feet in diameter, some of the young shoots have infrastipular spines, but most of them, as usual, were destitute of these spires. What should cause the differences noted in these instances? It is sometimes said that plants have an inherent tendency to vary, but this scarcely enlightens us or gives a satisfactory explanation of the results observed. Even the influence of cross pollination and the action of the laws of heredity do not seem a sufficient or satisfactory explanation in all cases. But whatever the hidden or unknown causes of such variations may be the resulting phenomena are certainly interesting to the student of nature and in the case of useful plants they are not without utility. They indicate a peculiar kind of adaptability in the species to varying conditions of growth and to wider fields of usefulness.

Some special effort has been made to perfect the representation of our native pond weeds in the Herbarium. At the time the State Flora was written by Doctor John Torrey nine species of *Potamogeton* were recorded as inhabiting New York waters. In the Monograph of the Naiadaceæ of North America recently prepared by Doctor Thomas Morong, 27 New York species are recognized. Of these 26 are now represented in the Herbarium. Some of these species are extremely variable and require many specimens to properly represent them in all their variations. Many forms and varieties new to the Herbarium have been collected, also one species new to the Herbarium and one new to the State. *Potamogeton lucens* var. *Connecticutensis* was discovered by Mr. L. H. Hoysradt in Stissing pond several years ago. This still remains its only known locality in our State. From it specimens of this rare form have been obtained. More typical forms were collected in Oneida and Cayuga lakes where the plants are by no means scarce. A list of the New York species of *Potamogeton* is given in another part of this report. "The Plains" is a name given to a tract of land lying along the upper waters of the Oswegatchie river in the southern part of St. Lawrence county. Being desirous of observing the character of its vegetation this place was visited. It is destitute of trees with the exception of a few scattered poplars and tamaracks. Clumps of willows and of the common meadow sweet with some mountain fly honeysuckle, an abundance of Canadian blueberry and some choke cherry and choke berry bushes are the principal shrubs. The prickly blackberry, *Rubus setosus*, a northern species, is here and the common winter-green. Goldenrods were abundant, the Canadian goldenrod prevailing and showing marked variations. The willow-leaved goldenrod, *Solidago uliginosa*, which usually grows in swamps and wet places, here grows on dry sandy soil. A peculiar departure from the ordinary habitat was also noticed in two grasses, the white-grained mountain rice, *Oryzopsis asperifolia*, and the purple wild-oat, *Avena striata*. These usually grow in the shade of trees or in woods, but here both were abundant and growing exposed to the full sunlight. The land of this tract is not level but rises gradually as it recedes from the river, and in some

places there are depressions or swales. In these, several species of sedge grow and other plants fond of moist or wet soil. The whole area was strongly suggestive of an old wornout or abandoned farm. There was no evidence of former forest growth on it nor was it clear why trees had not occupied it. One guide claimed that fire had destroyed the timber but I saw no remains of charred trunks to bear out this claim. The indications point rather to poverty of soil as a partial explanation of the absence of forest trees and yet this is evidently not the whole nor a very satisfactory explanation.

The newspapers have recently reported several cases of mushroom poisoning. This emphasizes the importance of a more general and better knowledge of these plants and more care in selecting and eating them. It indicates that the action of the Board of Regents in directing the preparation of life-size colored figures of our edible and poisonous species of fungi and plain and simple descriptions of them was wise and needful. It is very desirable that the appropriation necessary for the publication of these plates and descriptions be made at the coming session of the Legislature. The question is often asked, how shall the edible mushrooms be distinguished from the poisonous or dangerous species. The answer is, there is no simple or peculiar mark or character by which they may be distinguished. It is necessary to know and to be able to recognize each species used for food by its own specific characters. All not known to be safe eating, should be rejected. This is the rule in the case of the higher orders of plants. A considerable number of species are known to be good for food, a few are known to be poisonous, either in root, herbage or fruit and a much larger number, while neither hurtful nor edible, are regarded as either worthless or useful for other than edible purposes. We invariably recognize those used for food by their own specific characters and do not look for any single mark or character by which to distinguish poisonous plants or fruits from edible ones. Sometimes the good and bad are closely related botanically and accidents happen from a failure to recognize specific characters. Thus poison hemlock is sometimes mistaken for sweet cicily, both belonging to the

same family and having a similar general appearance. In the Nightshade family or Solonaceæ we find such food plants as the potato, tomato and eggplant associated botanically with such inedible or hurtful species as tobacco, henbane and thorn apple or stramonium. If we would avoid accidents we must know each species so well that no dangerous species will be mistaken for it. So among fungi we find that really excellent esculent, the royal mushroom, often called Cæsar's mushroom, *Amanita cæsarea*, associated not only in the same genus but even in the same group or section with the delusive and deadly phalloid mushroom, *Amanita phalloides*. Both are attractive in appearance, tender in substance and not at all repulsive in taste or odor, but to eat one is health and life, to eat the other is sickness and death.

But the species of fleshy fungi are so numerous and so similar in structure that much greater care is required in discriminating between the good and the bad, than is necessary in the case of flowering plants. It is scarcely to be expected that people generally will acquire sufficient knowledge to enable them to do this in all cases, but all who desire to use these plants as food may easily acquire from faithful figures and simple descriptions a sufficient knowledge to enable them to distinguish the more common and important species. There are at least 75 edible species found in our State, though many of them are rare or seldom seen in abundance. Some are both common and abundant and these may easily become familiar to those interested. In some countries of Europe where mushroom eating is more common than it is here, it has been found expedient to appoint inspectors of the markets whose duty it is to see that no hurtful species is offered for sale. But if people in the country see fit to run the risk of collecting and eating such as are not known to be safe and edible they must suffer the consequences.

There are certain rules that guide the mycologist and the skilled experimenter in estimating the probable character or edibility of untried species, but to these there are so many exceptions that they are not wholly reliable.

One rule is to reject all which are tough leathery or corky in texture. Even in the absence of any deleterious quality they would at least be indigestible. The fairy ring mushroom, *Marasmius oreades*, is an exception to this rule, for though it is rather

tough it is often eaten with relish and with proper preparation its toughness is overcome. Some species are tender when young though tough when old. Some tough species may be utilized in making soups or in giving flavor to other dishes.

Another rule says reject all such as have an unpleasant taste or odor in the fresh state. The honey colored mushroom may be cited as an exception to this rule. Its taste is harsh and unpleasant when uncooked, but this to a great extent removed by proper cooking, and a very good and harmless meal may be made of it. Some species of *Lactarius* have a very hot, acrid or peppery taste when fresh, but this in some cases may be dispelled by cooking. Even the delicious *lactarius* and the *chantarelle*, whose edible qualities are highly commended, are not very pleasant in flavor when fresh.

In some species of *Boleti* the flesh where bruised or wounded quickly assumes a blue or greenish-blue color. The rule is to avoid all such species as dangerous.

One author counsels avoidance of all such as have pink or flesh-colored spores. An exception to this rule is found in the plum *clitopilus*, *Clitopilus prunulus*, which is regarded as a very good mushroom, notwithstanding its pink spores.

Even mushrooms which in good condition are palatable and nutritious may become unfit for food and even hurtful by age and decomposition or by becoming water-soaked or infested by the larvæ of insects. Even too long keeping before cooking has been known to make them deleterious. In one instance a large quantity of a species known to be edible was collected. The family made a meal of a part of them the same day. No evil results followed. The remaining part was reserved till the next day, then cooked and eaten. Those partaking of these stale samples were made sick and vomiting ensued. But all except one soon recovered after the rejection of the noxious material. Even the common edible mushroom is said to keep in good condition longer if cooked soon after it is gathered than if left in its raw state.

Several edible species have when fresh a farinaceous or meal-like taste and odor. From this some have drawn the inference that this is a mark of edible species, or at least that all which

have this flavor are esculent. But there are many exceptions to this, for some when first tasted have a pleasant farinaceous flavor, which is quickly followed by one that is bitter or otherwise unpleasant.

From all this it will readily be seen how difficult it is to devise any general practical rule by which to separate the esculent from the dangerous species.

Probably the phalloid amanita, *Amanita phalloides*, is the one species above all others that causes the most of the deaths attributed to mushroom poisoning. The cap of this species varies somewhat in color, the form, which is entirely white, being the most common with us and the most often mistaken for the common mushroom. Only gross carelessness, however, could make such a mistake, for in this deleterious toadstool the stem is nearly always much longer proportionately than in the mushroom, it has an abrupt and large bulb at its base which is wanting in the mushroom, and its gills or lamellæ on the under surface of the cap are always white, while in the mushroom they are, when young, a beautiful pink or flesh color, but when old this changes to a brown or blackish color.

Considerable time was occupied in the early part of the year, as will be shown by the monthly reports, in preparing an exhibit of specimens of economic fungi for the World's Columbian Exposition. The questions asked me and the remarks of visitors overheard by me while placing this exhibit in position in the Horticultural Building indicate that it may be a valuable part in the Museum's exhibit as an educator of the public. It is composed of 61 species of edible fungi, 63 species of fungi growing on and injurious to wood, 18 species of parasitic fungi which are injurious to cultivated or useful wild plants, and six species that are injurious to noxious weeds and animals, and therefore beneficial to man. A list of the names of these species and varieties is marked E. A preliminary list of Hymenomycetous Fungi inhabiting our principal coniferous trees is marked F.

Respectfully submitted.

CHARLES H. PECK.

ALBANY, September 19, 1893.

(A.)

PLANTS ADDED TO THE HERBARIUM.

New to the Herbarium.

| | |
|-------------------------------------|--|
| <i>Hieracium Marianum Willd.</i> | <i>Septoria Scutellariæ Thum.</i> |
| <i>Polygonum Douglassii Greene.</i> | <i>S. conspicua E. & M.</i> |
| <i>Potamogeton Vaseyi Robbins.</i> | <i>Haplosporella Symphoricarpi Pk.</i> |
| <i>P. pulcher Tuckerm.</i> | <i>Rhabdospora rhoisa Pk.</i> |
| <i>P. lucens L.</i> | <i>Camarosporium metableticum Trail.</i> |
| <i>Carex glabra Boott.</i> | <i>Volutella stellata Pk.</i> |
| <i>Panicum miliaceum L.</i> | <i>Epicoccum nigrum Lk.</i> |
| <i>Psathyrella tenera Pk.</i> | <i>Penicillium candidum Lk.</i> |
| <i>Hydnum subcarnaceum Fr.</i> | <i>Cercospora tenuis Pk.</i> |
| <i>Merulius tenuis Pk.</i> | <i>Cladosporium episphæricum Schw.</i> |
| <i>M. irpicinus Pk.</i> | <i>Zygodesmus granulatus Pk.</i> |
| <i>Stereum populneum Pk.</i> | <i>Peronospora Hydrophylli Waite.</i> |
| <i>Lepidoderma fulvum Mass.</i> | <i>Peziza Dudleyi Pk.</i> |
| <i>Æcidium Actææ Opiz.</i> | <i>Exoascus Potentillæ Sacc.</i> |
| <i>Phoma enteroleuca Sacc.</i> | <i>Diatrype Hochelagæ E. & E.</i> |
| <i>Cytospora ambiens Sacc.</i> | <i>Sphærella Chimaphilæ Pk.</i> |
| <i>C. carbonacea Fr.</i> | <i>Diaporthe decedens Fr.</i> |
| <i>Septomyxa persicina Sacc.</i> | <i>Massariella Curreyi Tul.</i> |
| <i>Discosia magna Pk.</i> | <i>Melanconis occulta Sacc.</i> |
| <i>Septoria Pisi West.</i> | <i>Amphisphæria umbrina Wint.</i> |

Not New to the Herbarium.

| | |
|-------------------------------------|--|
| <i>Ranunculus circinatus Sibth.</i> | <i>Acer spicatum Lam.</i> |
| <i>R. septentrionalis Poir.</i> | <i>A. saccharinum Wang.</i> |
| <i>R. Pennsylvanicus L.</i> | <i>Prunus Americanum Marsh.</i> |
| <i>Coptis trifolia Salisb.</i> | <i>P. Persica B. & H.</i> |
| <i>Thalictrum purpurascens L.</i> | <i>Rubus Millspaughii Britton.</i> |
| <i>Actæa alba Bigel.</i> | <i>R. Canadensis L.</i> |
| <i>Asimina triloba Dunal.</i> | <i>R. hispidus L.</i> |
| <i>Nymphæa reniformis DC.</i> | <i>Fragaria vesca L.</i> |
| <i>Nuphar advena Ait.</i> | <i>Agrimonia parviflora Ait.</i> |
| <i>Dentaria diphylla L.</i> | <i>Rosa blanda Ait.</i> |
| <i>Cardamine rhomboidea DC.</i> | <i>Saxifraga aizoides L.</i> |
| <i>Arabis perfoliata Lam.</i> | <i>Tiarella cordifolia L.</i> |
| <i>Nasturtium palustre DC.</i> | <i>Mitella diphylla L.</i> |
| <i>N. hispidum DC.</i> | <i>Ribes Grossularia L.</i> |
| <i>Hesperis matronalis L.</i> | <i>Myriophyllum spicatum L.</i> |
| <i>Brassica oleracea L.</i> | <i>Callitriche heterophylla Pursh.</i> |
| <i>Raphanus sativus L.</i> | <i>Sambucus racemosa L.</i> |
| <i>Viola Canadensis L.</i> | <i>Galium Aparine L.</i> |
| <i>V. rostrata Pursh.</i> | <i>G. asprellum Mx.</i> |
| <i>Silene stellata Ait.</i> | <i>G. trifidum L.</i> |
| <i>Stellaria media Sm.</i> | <i>Solidago uliginosa Nutt.</i> |
| <i>Ailanthus glandulosus Desf.</i> | <i>S. juncea Ait.</i> |

- Solidago Canadensis L.*
Aster macrophyllus L.
A. Novi-Belgii L.
A. acuminatus Mx.
A. nemoralis Ait.
Erigeron strigosus Muhl.
E. Philadelphicus L.
Rudbeckia hirta L.
Bidens Beckii Torr.
Calendula officinalis L.
Anthemis Cotula DC.
Achillea Millefolium L.
Chrysanthemum Leucanthemum L.
Prenanthes Serpentina Pursh.
P. altissima L.
Lactuca Canadensis L.
L. integrifolia Bigel.
Sonchus asper Vill.
Campanula aparinoides Pursh.
Vaccinium corymbosum L.
Rhododendron viscosum Torr.
R. maximum L.
Primula Mistassinica Mx.
Steironema lanceolatum Gr.
Lysimachia stricta Ait.
L. quadrifolia L.
L. Nummularia L.
Fraxinus Americana L.
F. sambucifolia Lam.
Apocynum cannabinum L.
A. androsaemifolium L.
Asclepias tuberosa L.
Gentiana linearis Froel.
Lithospermum officinale L.
Physalis lanceolata Mx.
Mimulus ringens L.
M. moschatus Dougl.
Veronica Virginica L.
Utricularia vulgaris L.
Verbena hastata L.
Teucrium Canadense L.
Pycnanthemum incanum Mx.
Blephilia hirsuta Benth.
Brunella vulgaris L.
Rumex Patientia L.
Polygonum aviculare L.
P. amphibium L.
Asarum Canadense L.
Saururus cernuus L.
Dirca palustris L.
- Pinus Banksiana Lambert.*
P. resinosa Ait.
Picea nigra Lk.
P. alba Lk.
Larix Americana Mx.
Elodea Canadensis Mx.
Microstylis monophyllus Lindl.
Habenaria bracteata R. Br.
Cypripedium acaule Ait.
Clintonia borealis Raf.
Lilium Canadense L.
Pontederia cordata L.
Juncus militaris Bigel.
Luzula vernalis DC.
Typha latifolia L.
Potamogeton natans L.
P. Nuttallii C. & S.
P. Spirillus Tuckerm.
P. lonchites Tuckerm.
P. amplifolius Tuckerm.
P. heterophyllus Schreb.
P. praelongus Wulf.
P. perfoliatus L.
P. crispus L.
P. zosteræfolius Schum.
P. pusillus L.
P. major Morong.
P. filiformis Pers.
P. pectinatus L.
Fimbristylis autumnalis R. & S.
Scirpus lacustris L.
S. sylvaticus L.
Eriophorum lineatum B. & H.
E. cyperinum L.
E. gracile Koch.
Carex tribuloides Wahl.
C. cristata Schw.
C. foenea Willd.
C. straminea Willd.
C. mirabilis Dew.
C. siccata Dew.
C. bromoides Schk.
C. Deweyana Schw.
C. trisperma Dew.
C. canescens L.
C. sterilis Willd.
C. Muhlenbergii Schk.
C. rosea Schk.
C. vulpinoidea Mx.
C. stipata Muhl.
C. laxiculmis Schw.

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| <i>Carex digitalis</i> Willd. | <i>Agropyrum violaceum</i> Lange. |
| C. <i>laxiflora</i> Lam. | <i>Flammula alnicola</i> Fr. |
| C. <i>albursina</i> Sheldon. | <i>Pluteolus expansus</i> Pk. |
| C. <i>Oederi</i> Ehrh. | <i>Cortinarius argentatus</i> Fr. |
| C. <i>gracillima</i> Schw. | <i>Russula uncialis</i> Pk. |
| C. <i>æstivalis</i> Curt. | <i>Cantharellus minor</i> Pk. |
| C. <i>debilis</i> Mx. | <i>Coprinus micaceus</i> Fr. |
| C. <i>virescens</i> Muhl. | <i>Boletus subtomentosus</i> L. |
| C. <i>limosa</i> L. | <i>Polyporus resinosus</i> Fr. |
| C. <i>torta</i> Boott. | P. <i>salicinus</i> Fr. |
| C. <i>Houghtonii</i> Torr. | <i>Poria radiculosa</i> Pk. |
| C. <i>squarrosa</i> L. | <i>Porothelium fimbriatum</i> Fr. |
| C. <i>utriculata</i> Boott. | <i>Corticium incarnatum</i> Fr. |
| C. <i>oligosperma</i> Mx. | C. <i>subaurantiacum</i> Pk. |
| C. <i>intumescens</i> Rudge. | <i>Entomosporium maculatum</i> Lev. |
| C. <i>lurida</i> Wahl. | <i>Chrysomyxa Pyrolæ</i> Rostr. |
| C. <i>communis</i> Bail. | <i>Ustilago anomala</i> Kze. |
| C. <i>Pennsylvanica</i> Lam. | <i>Sphacelotheca Hydropiperis</i> DeBy. |
| C. <i>longirostris</i> Torr. | <i>Uromyces Limonii</i> Lev. |
| <i>Panicum latifolium</i> L. | U. <i>Trifolii</i> Lev. |
| P. <i>clandestinum</i> L. | U. <i>Polygoni</i> Fekl. |
| <i>Phalaris arundinacea</i> L. | U. <i>Euphorbiæ</i> C. & P. |
| <i>Brachyelytrum aristatum</i> Bv. | <i>Puccinia Galii</i> Schw. |
| <i>Agrostis alba</i> L. | <i>Sphæropsis malorum</i> Pk. |
| <i>Arrhenatherum avenaceum</i> Bv. | <i>Vermicularia liliacearum</i> Schw. |
| <i>Avena striata</i> Mx. | <i>Coryneum microstictum</i> B. & Br. |
| <i>Danthonia spicata</i> Bv. | <i>Peridermium balsameum</i> Pk. |
| D. <i>compressa</i> Aust. | <i>Actinonema Rosæ</i> Fr. |
| <i>Poa annua</i> L. | <i>Cystopus candidus</i> Lev. |
| P. <i>compressa</i> L. | C. <i>spinulosus</i> DeBy. |
| P. <i>debilis</i> Torr. | C. <i>Amaranthi</i> Berk. |
| P. <i>serotina</i> Ehrh. | <i>Ramularia Armoraciæ</i> Fekl. |
| <i>Festuca ovina</i> L. | <i>Fusarium oxysporum</i> Schl. |
| F. <i>elatior</i> L. | <i>Diatrype virescens</i> Schw. |
| F. <i>nutans</i> Willd. | <i>Hypoxyton perforatum</i> Schw. |
| <i>Bromus ciliatus</i> L. | H. <i>atropurpureum</i> Fr. |
| B. <i>purgans</i> L. | <i>Plowrightia morbosa</i> Sacc. |
| <i>Agropyrum repens</i> Bv. | <i>Urocystis Waldsteinia</i> Pk. |

(B.)

CONTRIBUTORS AND THEIR CONTRIBUTIONS.

Mrs. E. G. Britton, New York, N. Y.

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|---|---|
| <i>Ephemerum crassinervium</i> Hampe. | <i>Dicranum fulvellum</i> Sm. |
| <i>Rhabdoweisia denticulata</i> B. & S. | D. <i>Sauteri</i> Sch. |
| <i>Dicranella heteromalla</i> Schp. | <i>Cynodontium graciliscens</i> Schp. |
| <i>Dicranum fulvum</i> Hook. | C. <i>virens</i> Schp. |
| D. <i>flagellare</i> Hedw. | <i>Dicranodontium longirostre</i> B. & S. |
| D. <i>longifolium</i> Hedw. | <i>Didymodon cylindricus</i> B. & S. |
| D. <i>viride</i> Schp. | <i>Barbula tortuosa</i> W. & M. |

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| <i>Trichostomum vaginans</i> <i>Sulliv.</i> | <i>Neckera oligocarpa</i> <i>B. & S.</i> |
| <i>Blindia acuta</i> <i>B. & S.</i> | <i>Eurhynchium strigosum</i> <i>B. & S.</i> |
| <i>Ulota crispa</i> <i>Brid.</i> | <i>Plagiothecium denticulatum</i> <i>B. & S.</i> |
| <i>Grimmia conferta</i> <i>Fneck.</i> | <i>Limnobia montanum</i> <i>Wils.</i> |
| <i>Racomitrium microcarpum</i> <i>Brid.</i> | L. eugyrium <i>Schp.</i> |
| R. fasciculare <i>Brid.</i> | L. ochraceum <i>B. & S.</i> |
| <i>Anacamptodon splachnoides</i> <i>Brid.</i> | <i>Hypnum reptile</i> <i>Mx.</i> |
| <i>Aulacomnium palustre</i> <i>Schwægr.</i> | H. umbratum <i>Ehrh.</i> |
| <i>Anomodon apiculatus</i> <i>B. & S.</i> | H. strigosum <i>Hoffm.</i> |
| <i>Homalia trichomanoides</i> <i>B. & S.</i> | <i>Rhynchostegium Jamesii</i> <i>Sulliv.</i> |

Mrs. P. H. Dudley, New York, N. Y.

Chondrus crispus *Lyng.*

Mrs. E. C. Anthony, Gouverneur, N. Y.

Rudbeckia hirta *L.*

Rev. J. L. Zabriskie, Flatbush, N. Y.

Nostoc sphæricum *Vauch.*

Zygodesmus granulosus *Pk.*

Volutella stellata *Pk.*

George Green, Katonah, N. Y.

Cladosporium fulvum *Cke.*

S. M. Tracy, Agricultural College, Miss.

Cerebella Paspali *C. & M.*

Cerebella Spartinae *E. & E.*

C. Andropogonis *Ces.*

Cercospora personata *B. & C.*

R. B. Hough, Lowville, N. Y.

Pinus inops *Att.*

C. L. Shear, Alcove, N. Y.

Carex debilis *Mx.*

Diatrype Hochelagæ *E. & E.*

Solenia anomala *Pers.*

Melanconis occulta *Sacc.*

Haplosporella Symphoricarpi *Pk.*

Smith Ely Jelliffe, M. D., Brooklyn, N. Y.

Camarosporium metableticum *Trail.* *Amphisphaeria umbrina* *Wint.*

William Herbst, M. D.

Queletia mirabilis *Fr.*

N. Ringueberg, M. D., Lockport, N. Y.

Asimina triloba *Dunal.*

L. H. Hoysradt, Pine Plains, N. Y.

Carex arcta *Boott.*

Lycopodium alopecuroides *L.*

C. glabra *Boott.*

L. Carolinianum *L.*

C. stenolepis *Torr.*

Asplenium viride *Huds.*

C. bullata *Schk.*

E. S. Miller, Floral Park, N. Y.

Potamogeton pulcher *Tuckerm.*

B. D. Halsted, New Brunswick, N. J.

Exobasidium Peckii *Halst.*

W. R. Dudley, Palo Alto, Cal.

Hydnum subcarnaceum *Fr.*Merulius irpicinus *Pk.*M. tenuis *Pk.*Lepidoderma fulvum *Mass.*Polyporus versicolor *Fr.*Penicillium candidum *Lk.*Peziza Dudleyi *Pk.*Gyromitra sphaerospora *Sacc.*Dædalea unicolor *Fr.*

(C.)

SPECIES NOT BEFORE REPORTED.

Ranunculus hispidus *Max.*

North Greenbush. May. This is included, in the New York State Flora, with *Ranunculus repens* as variety *Marilandicus*, but it is now regarded by good botanists as a distinct species. It is one of our earliest flowering buttercups.

Aster leiophyllus *Porter.*

Lake Mohonk and Shokan, Ulster county. Sept. This beautiful aster was at first described by Professor Porter under the name *Aster cordifolius* var. *laevigatus*, but having concluded that it is a distinct species, he has published it as such under the name here given. It certainly appears to me to be a good species easily distinguished from *A. cordifolius* both by the character of its leaves and of its flowers.

Senecio Robbinsii *Oakes.*

Rocky banks of Black river below Brownsville. June. This plant is *Senecio aureus* var. *Balsamitæ* of the Manual, but it has recently been raised to specific rank, a position which, in my opinion, it justly merits. According to Dr. Rusby's description, the typical form of the species is two to three feet high, glabrous, with the root leaves sharply and unequally serrate. In our specimens the root leaves are crenately serrate, the plants are one to two feet high and show a cotton-like tomentum at the insertion of the leaves and also, under a lens, a minute loose tomentum on the leaves and stems and at the base of the involucre. The peduncles originate at nearly the same point at the top of the stem, giving to the corymb an umbellate appearance. In consequence of these variations from the type I would designate our

plant as var. *subtomentosus*. Unlike the typical form our plant grew in thin dry soil covering rocks. It was partly shaded by trees.

Hieracium Marianum Willd.

Highland lake, Sullivan county. July. Rare.

Polygonum Douglassii Greene.

Rocky summit of Cobble hill near Elizabethtown, Essex county. September.

This was formerly referred to *P. tenue*, but it is easily distinguished from that species by its drooping fruit.

Potamogeton Vaseyi Robbins.

Thompson's lake, Albany county. August. Dr. Morong finds it in Greenwood lake, Orange county.

In general appearance it resembles *P. diversifolius*, from which it is easily separated by its larger fruit with the middle keel rounded.

Potamogeton pulcher Tuckerm.

Riverhead, Suffolk county. E. S. Miller. Rare.

Potamogeton major (Fr.) Morong.

Cayuga and Seneca lakes. August. This is *P. pusillus* of the State Flora where it is credited to Crooked lake on the authority of Dr. Sartwell. In the Manuals it stands as *P. pusillus* var. *major* and *P. mucronatus*. I follow Dr. Morong in considering it a good species and I have adopted the name under which he publishes it.

Carex glabra Boott.

Taberg, Oneida county, and Cooperstown Junction, Otsego county. June. In the Taberg station it was growing in the midst of a patch of *C. debilis*. Its heavier spikes and different appearance at once attracted attention.

Carex albursina Sheldon.

This plant has been considered a variety of *C. laxiflora* and is subjoined to that species as var. *latifolia* in the Manual. But it

is so constant in its characters and so easily separated from all forms of *C. laxiflora*, by its broad bracts and short inconspicuous staminate spike that I can readily admit its claims to specific rank. We have it from the Helderberg mountains and from Sanfords Corners, Jefferson county. June.

***Panicum miliaceum* L.**

Port Jervis and Albany. July. This millet has been introduced and is frequently found growing in waste places about cities and villages. Prof. Dudley reports it at Ithaca, and Dr. Howe at Lansingburgh and in various places in the valley of the lower Hudson.

***Psathyrella tenera* n. sp.**

Pileus thin, campanulate, obtuse, moist or subhygrophanous reddish-cinereous when moist, paler when dry, slightly rugulose and atomate; lamellæ broad, adnate, plane or but slightly ascending, subdistant, at first pallid or subcinereous, then umber and finally blackish, white on the edge; stem slender, glabrous, stuffed or hollow, white, with a white floccose mycelium at the base; spores narrowly elliptical, .0005 to .00055 in. long, .0003 broad.

Pileus 3 to 5 lines broad; stem 1 to 1.5 in. long, scarcely half a line thick.

Damp mucky ground in open woods. Pierrepont Manor, Jefferson county. June.

This plant resembles small forms of *Galera tenera* in color and shape, but it is readily distinguished from that species by the darker color of the mature lamellæ and of the spores. The plant is much smaller than *P. gracilis* and *P. graciloides* to which it seems to be related.

***Hydnum subcarnaceum* Fr.**

Decayed wood. Ithaca. Prof. W. R. Dudley.

***Merulius irpicinus* n. sp.**

Resupinate, thin, soft, more or less tomentose beneath, whitish, the margin sometimes free or slightly reflexed; hymenium at first gyrose porose, the dissepiments at length prolonged into subulate or irpex-like teeth, subferruginous; spores subglobose or elliptical, colored, .0002 to .00028 in. long, .00015 to .0002 broad.

Decaying wood. Ithaca. October. Dudley.

This species resembles *M. lacrymans* in habit and color, but it is thinner and more fragile, with smaller pores and spores, and it is especially distinguished by the elongated or subulate teeth that project from the older parts of the hymenium. It is referable to the section Coniophori.

***Merulius tenuis* n. sp.**

Resupinate, very thin, tender, reddish-brown inclining to liver color, the margin webby-tomentose, whitish; dissepiments narrow, irregular, forming shallow unequal pores; spores colored, .00035 to .0004 in. long, .00025 to .0003 broad.

Much decayed wood. Ithaca. *Dudley*.

The color of the dried specimens resembles that of Persoon's figure of *M. pulcher*, but the dissepiments and pores are different. This species also is referable to the section Coniophori.

***Stereum populneum* n. sp.**

Resupinate, very thin, orbicular, often confluent in patches, minutely rimose, brown tinged with liver color, minutely whitish-punctate under a lens, the thin radiate-dentate margin a little paler, at length becoming more or less free; spores oblong, .0005 to .0006 in. long, .00016 broad.

Bark of prostrate trunks of poplar, *Populus tremuloides*. Adirondack mountains. August.

This is distinct from all allied species by its peculiar color, its minutely chinky and punctate hymenium and its subfree dentate margin.

It is related to *S. albobadium*.

***Stereum ambiguum* n. sp.**

Resupinate, suborbicular or irregular, soon confluent in patches, one-half to one line thick, dry, subcorky but brittle, tawny-brown and subtomentose beneath; the hymenium tawny-brown becoming paler or grayish tawny with age, rimose when mature, with a faintly pulverulent or pruinose-velvety appearance; the margin yellowish, generally becoming free; spores oblong or subfusiform, .0005 to .0007 in. long, .0002 broad.

Wood and bark of prostrate trunks of spruce, *Picea nigra*. Adirondack mountains. June.

This singular species is apparently related to *Stereum abietinum*, to which it was formerly referred, but from which it was seen to be distinct when the spore characters of that species were published.

The thick interior stratum is similar in color to the hymenium and appears to be composed of densely compacted erect fibrils. The hymenium, under a lens, is seen to possess both setæ and metuloids, thus combining the characters of the genera *Hymenochæte* and *Peniophora*, and obliterating the distinction of these as *Dædalea confragosa*, in its various forms, destroys the distinction between *Trametes* and *Lenzites*. Moreover when these setæ and metuloids are more highly magnified they are found to vary among themselves, being sometimes smooth and sometimes warted, acute or blunt, colored or colorless, and sometimes even partly colored and smooth and partly colorless and warted.

Also the hymenium, though dry and firm in texture, becomes rimose as in many of the species of *Corticium* with a soft and waxy hymenium.

***Lepidoderma fulvum* Mass.**

Decayed wood. Ithaca. *Dudley.*

This is a small form scarcely one line high. The scales of the peridium are white, the few large spores intermingled with those of the prevailing size are .0007 to .0008 in. broad, and the slender threads of the capillitium are sometimes furnished with thickenings as in those of *L. tigrinum*. The plants grow either singly or in groups of three to five.

***Æcidium Actææ* Opiz.**

Living leaves of baneberry, *Actæa spicata* v. *rubra*. Adams, Jefferson county. June.

***Phoma enteroleuca* Sacc.**

Decorticated branches of apple tree. Bethlehem, Albany county. May.

Our specimens differ from the typical form in growing on decorticated branches and in having the spores slightly broader.

Cytospora ambiens Sacc.

Dead stems of raspberry, *Rubus strigosus*. Menands, Albany county. April.

Cytospora carbonacea Fr.

Dead branches of elm, *Ulmus Americana*. Elizabethtown. May.

The mass of ejected spores is black when dry.

Septomyxa persicina (Fres) Sacc.

Rind of squashes. Menands. January.

Var. **nigricans** *n. var.* Forming large irregular black patches; heaps minute; spores oblong, rounded at each end, more or less narrowed in the middle, often two to four-nucleate, colorless; .0003 to .0005 in. long, .00012 to .00016 broad, oozing out and forming a pale wine-colored or peach-colored tendril or mass.

Discosia magna n. sp.

Perithecia gregarious, suborbicular, large, .014 to .024 in. broad, black, opaque, even or obsoletely rugulose, ostiolate, rarely confluent; spores oblong-fusoid, curved, obscurely two to three-septate, .0005 to .0008 in. long, the bristle at each end .0004 to .0005 in. long.

Fallen fruit of ash, *Fraxinus Americana*. Elizabethtown. May.

The species is easily known by its large opaque perithecia and simple or obscurely septate spores.

Septoria Pisi. West.

Living pea leaves. Adirondack mountains. August.

Septoria Scutellariæ Thum.

Living leaves of scull-cap, *Scutellaria galericulata*. Adirondack mountains. July.

Septoria conspicua E. & M.

Living leaves of fringed loosestrife, *Steironema ciliatum*. Long Island. July.

Haplosporella Symphoricarpi *n. sp.*

Stroma small .02 to .06 in. broad, often confluent, erumpent, suborbicular, closely surrounded by the ruptured remains of the epidermis, black, the upper surface plane or slightly convex, dotted by the slightly prominent ostiola; spores oblong, colored, continuous, .0006 to .0008 in. long, .0003 broad.

Dead stems of snowberry, *Symphoricarpus racemosus*. Alcove, Albany county. March. *C. L. Shear*.

Rhabdospora rhoïna *n. sp.*

Perithecia numerous, sunk in the bark, covered by the slightly pustulated epidermis; spores subfiliform, slender, curved, .0005 to .0006 in. long, oozing out and forming slender yellowish or pallid tendrils.

Dead branches of sumac, *Rhus typhina*. Cooperstown Junction. June.

Volutella stellata *n. sp.*

Sporodochia minute, sometimes confluent in irregular masses which are one to two lines long, covered by the mostly stellately branched brownish-tawny setæ; spores globose or subelliptical, .00016 to .0002 in. long.

Much decayed wood of chestnut. Flatbush. September. *Rev. J. L. Zabriskie*.

This is a peculiar and somewhat aberrant species but it appears to be connected with normal forms by *V. ochracea*. The setæ are variable in length and in ramification. Some are simply dichotomous, others are stellate below and dichotomous above.

Epicoccum nigrum *Lk.*

Dead stems of blackberry lily, *Balanocanda Chinensis*. Menands. May.

Penicillium candidum *Lk.*

On mushrooms, *Agaricus campester*, in a greenhouse. Ithaca. *Dudley*.

Var. *subcandidum*. Fertile hyphæ irregularly branched above, the color at first white, then whitish or cinereous.

Cercospora tenuis *n. sp.*

Spots large, sometimes discoloring the whole leaf, reddish brown; hyphæ fasciculate, short, .0016 in. long, .00016 broad, colored, obscurely septate, the tufts appearing like minute black dots on the upper surface of the leaf; spores very slender, gradually tapering to the apex, continuous or with one to three septa, hyaline, .0016 to .0024 in. long.

Living leaves of hairy bedstraw, *Galium pilosum*. Riverhead. July.

The species is quite distinct from *C. Galii*.

Cladosporium episphærium *Schw.*

On *Daldinia concentrica*. Elizabethtown. May.

Zygodesmus granulosus *Pk.*

Decayed wood of chestnut. Flatbush. August. *Zabriskie*.

Peronospora Hydrophylli *Waite.*

Living leaves of Virginian waterleaf, *Hydrophyllum Virginicum*. Bergen, Genesee county. June.

Peziza Dudleyi *n. sp.*

Cups irregular, one to two inches broad, sessile, externally with a minute appressed white tomentum; hymenium bright yellow inclining to saffron or orange, often rimulose; asci cylindrical; spores oblong, even, binucleate, somewhat granular within, .001 to .0012 in. long, .0005 to .0006 broad; paraphyses filiform, slightly thickened at the tips.

Ground and decayed wood. Ithaca. October. *Dudley*.

This fungus appears to be related to such species as *P. aurantia* and *P. inæqualis*, from both of which it is at once distinguished by its yellow hymenium and larger spores.

Exoascus Potentillæ *Sacc.*

Living leaves of cinquefoil, *Potentilla Canadensis*. Coopers-town Junction. June. Middle Grove. July.

This fungus produces greenish yellow spots on the leaves. These spots are usually convex above, concave below.

Diatrype albopruinosa Schw.

Dead branches of oak, maple, hop hornbean, etc. Albany and Rensselaer counties.

Diatrype Hochelagæ E. & E.

Decayed wood. Alcove. January. Shear.

Sphærella Chimaphilæ n. sp.

Perithecia minute, .0025 to .003 in. broad, numerous, mostly hypophyllous, seated on indefinite blackish spots or occupying the whole surface of the leaf; asci subcylindrical, .0016 to .002 in. long; spores crowded in the ascus, subclavate, colorless, .0005 to .0006 in. long, .00016 broad.

Dead and fallen leaves of Princes Pine, *Chimaphila umbellata*. Cooperstown Junction. June. The septum of the spore is obscure.

Diaporthe decedens Fr.

Dead stems of hazelnut. Elizabethtown. May.

Massariella Curreyi Tul.

Dead branches of basswood, *Tilia Americana*. Selkirk, Albany county. June.

Our specimens are not typical, but may be called Var. *Americana*. Asci very variable in length, .007 to .009 in. long; spores .0016 to .002 in. long; .0005 to .0006 broad.

Melanconis occulta (Fekl.) Sacc.

Dead branches of poplar. Alcove. Shear.

The following species and varieties are described from extralimital specimens sent to me for identification and are not known to belong to our State Flora.

Clavaria Macouni n. sp.

Clubs single or clustered, 6 to 10 lines high, obtuse or subacute, dingy greenish-yellow or pale cinereous; spores minute, elliptical, .0002 in. long, .00012 broad.

Among mosses under cedar trees. Canada. September. *Macoun*.

The species belongs to the section *Syncoryne*.

Clavaria muscoides *L. var. obtusa n. var.*

Tips of the ultimate branches obtuse. Otherwise like the type. Under cedar trees. Canada. September. *Macoun.*

Hypochnus subviolaceus *n. sp.*

Effused, very thin, floccose-membranaceous, adnate, violet-gray, whitish on the margin; spores subglobose, nearly hyaline, .0002 to .00024 in. broad.

Dead decorticated wood. Canada. September. *Macoun.*

Leptothyrium Spartinae *n. sp.*

Perithecia minute, depressed, suborbicular elliptical or oblong, sometimes subconfluent in series, rugulose, black, brownish on the margin, easily separable from the matrix; spores narrowly elliptical, subacute, hyaline, .0005 to .0006 in. long, .0002 to .0003 broad, usually containing a single large nucleus, adorned with a filiform appendage at each end.

Dead stems of *Spartina juncea*. Biloxi, Mississippi. September. Number 1835. *S. M. Tracy.*

This is a very distinct species and one that departs from the usual characters of the members of the genus, in its large spores and their filiform appendages. These are sometimes longer than the spore itself. The thin margins of the perithecia have a radiate structure.

Ceratium hydroides *A. & S. var. ramosissimum n. var.*

Stromata very numerous, forming patches and dividing above into exceedingly numerous slender snow-white branches which interlace with each other and with those of neighboring stromata and thus form continuous masses.

Var. **subreticulatum** *n. var.* Stromata creeping or ascending, pure white, sparingly branched and uniting with each other in a somewhat reticulate manner.

Both varieties grow on soft much decayed wood. They have a very different appearance but the character of the spores is the same in both and indicates a merely varietal difference.

Canada. *Macoun.*

Zygodesmus tenuissimus *n. sp.*

Effused, pulverulent, very thin, yellowish-gray or subcinereous, the concolorous margin indefinite; the hyphæ short, septate, equalling or exceeding the spore in diameter; spores globose, spinulose, slightly colored, .0003 in. broad.

Decayed wood. Canada. September. *Macoun.*

The species appears to be related to *Z. marginatus* from which it is separable by its thin pulverulent character, short hyphæ and concolorous indefinite margin.

Asterula Tracyi *n. sp.*

Subiculum thin, hypophyllous, composed of slender flexuous septate colored filaments about .00016 in. thick; perithecia very minute, .004 to .005 in. broad, hemispherical or depressed, subastomous, black; asci oblong-clavate, .0011 to .0014 in. long, .0003 to .0004 broad; spores oblong, slightly narrowed toward one end, obscurely 2-to 4-nucleate, colorless, .0003 to .0004 in. long, .00012 to .00015 broad.

Living or languishing leaves of *Spermacoce parviflora*. Biloxi, Miss. August. Number 1842. *Tracy.*

Melogramma effusum *n. sp.*

Stroma effused, thin, superficial, black; perithecia minute, carbonaceous, crowded, convex, opaque, black, white within; asci subcylindrical; spores subfusiform, generally slightly curved, colorless, triseptate, .0008 to .0011 in. long, .00016 to .0002 broad, the second cell usually swollen.

Decayed wood. Canada. *Macoun.*

This species does not harmonize well with the character of the genus to which it is here referred, for the spores in this genus are typically colored. The colorless spores indicate relationship to the genus *Zignoella*, but the presence of a stroma, which with the perithecia forms a thin rugose carbonaceous crust, shows its relationship to the genus *Melogramma* and forbids its reference to *Zignoella*.

Stereum balsameum *Pk.* form **reflexum**.

Pileus coriaceous, firm when dry, villose-tomentose, obscurely zonate; hymenium smoky-purplish, changing to red where wounded.

Canada. *Macoun.*

(D.)

REMARKS AND OBSERVATIONS.

Anemone Virginiana *L. var. alba* Wood.

This variety is common in the hilly parts of Sullivan county, where it is the prevailing form. It sometimes forms patches of considerable extent. It does not, so far as I have seen, mingle with the typical form and I am disposed to think that it is a good variety.

Ranunculus circinatus *Sibth.*

Fine specimens of this water crowfoot were obtained in Cayuga lake. The peduncles become deflexed or curved downwards in fruit.

Silene stellata *Ait.*

A form of this plant occurs near Narrowsburg, Sullivan county, in which all the leaves, or all except those of a single whorl, are opposite. It is not uncommon to find a few of the uppermost and of the lowest ones opposite, but this form is apparently rare. Another form has the leaves beautifully crisped or undulate on the margin.

Prunus Americana *Marsh.*

The flowers of this native plum are usually white. A form occurs near Meadowdale, Albany county, and near Westport Essex county, in which they have the rosy hue of peach blossoms. It might be called variety *rosea*.

Rubus Canadensis *L.*

This low blackberry or dewberry is capable of adapting itself to a great variety of soils and circumstances. These sometimes affect its mode of growth. Plants were found growing among bushes in low swampy ground near Pine Plains, Dutchess county, in which the stem was quite as erect as in *Rubus villosus*. I have indicated in a previous report that whenever, through poverty of soil or for other reasons the prickly stemmed species of *Rubus* are unable to develop fully or grow freely this starved condition is shown by the failure of the prickles. The same thing has been observed to be the result of an attack of rasp-

berry rust, *Caeoma nitens*, both in the dewberry and the blackberry. Plants badly infested by this rust are generally destitute of prickles.

***Rubus setosus* Bigel.**

This northern species occurs in the open region known as "The Plains." This is in the southern part of St. Lawrence county near the headwaters of the Oswegatchie river.

***Agrimonia parviflora* Ait.**

Pine Plains. The plants were not yet in flower early in August.

***Rosa blanda* Ait.**

The variability of our native roses is the source of considerable difficulty and perplexity in their classification. In the last edition of the Manual this species is said to have no infrastipular spines, yet in a specimen collected at Cooperstown Junction these are plainly present. The stipules are described as dilated, but in another specimen from the same locality, they are very narrow. The fruit is described as globose, but in specimens collected at Thompson's lake, the fruit is pointed at the base and somewhat pyriform. In these specimens also the stipules are very narrow, even on young shoots.

***Ribes Grossularia* L.**

Bethlehem. May. An introduced species and escaped from cultivation.

***Saxifraga aizoides* L.**

Nearly thirty years ago this plant and its companion, *Primula Mistassinica*, were discovered by Rev. J. A. Paine on the wet and dripping precipices that lie along Fish creek, above Taberg. Both these plants are still abundant in that locality, and the nature of the place is such that nothing but the greed of botanists is likely soon to exterminate them. The yellow saxifrage is especially luxuriant, and often exceeds the dimensions attributed to it in the Manual. It is in flower when the primula is developing its fruit.

***Drosera rotundifolia* L.**

This pretty little sundew is common in the Adirondack region. A favorite habitat of it is on decaying trunks of trees lying in the water of lakes and ponds.

***Solidago uliginosa* Nutt.**

This pretty goldenrod is common in the Adirondack region. It usually inhabits bogs, marshes or wet places, but sometimes it is found growing in dry soil. It grows in such soil on "The Plains" and on the banks of the upper Oswegatchie river.

***Solidago juncea* Ait.**

Though described in the Manual as "smooth throughout," a form occurs on the Helderberg mountains in which the stem and branches are distinctly, though somewhat sparsely, hairy. This is the earliest in flower of the goldenrods about Albany.

***Solidago Canadensis* L.**

A form is common on "The Plains" in which the stem is but slightly hairy and the leaves are nearly smooth. They are either sharply serrate or almost entire. This form makes a close approach to *S. serotina*.

***Aster nemoralis* Ait.**

Several years ago a single specimen of this neat little aster was brought me by Judge Addison Brown, of New York, who collected it near Hitchings Pond. Recently, fine specimens were collected by myself on the marshy borders of one of the "Five Ponds" in the northern part of Herkimer county. The heads of flowers are large for the size of the plant and vary in number from one to seven in the specimens collected. There was also found on the rocky shore of this pond, near its outlet, a patch of a much larger form of this aster, for which I propose the name variety *major*. Stem one and a half to two feet high; heads of flowers, ten to thirty; leaves larger, two and a half to three inches long, five to seven lines broad, distantly dentate-serrate.

This variety grows in patches, but the typical form, so far as I have observed it, is scattered. In both forms the lower surface of the leaves is minutely resinous or glandular-puberulent, although this character is not noticed in the description of the Manual. The plants in press stick slightly to the drying papers because of this character. This aster occurs also in a marsh near Jayville. It appears thus far to be limited in its range to the northwestern part of the Adirondack region.

Rudbeckia hirta L.

A form with the lower half of the rays of a beautiful brown color occurs near Middle Grove. Mrs. Anthony sends the same form from Gouverneur.

Erigeron Philadelphicus L.

This handsome fleabane often grows from the crevices of wet shaded or dripping cliffs.

Tragopogon pratensis L.

The goatsbeard has been introduced into this country from Europe and is becoming more common each year. It is already beginning to assert itself as a troublesome weed, and those interested should carefully guard their fields and prevent its obtaining a foothold in them. It closely resembles the oyster plant, which sometimes escapes from cultivation, but which seems to be much less common and aggressive. The oyster plant has purple flowers, the goatsbeard, yellow flowers.

Hieracium præaltum Vill.

This troublesome weed is gradually extending its range southward. It was observed the past summer at Pierrepont Manor. It has also followed the Carthage and Adirondack railroad eastward and is now found at Jayville. It would be well if farmers would make a special effort to keep this weed in check and also its near relative, the orange hawkweed, *Hieracium aurantiacum*. They are similar in habit and appearance, but one has a yellow flower, the other an orange or reddish blossom. This one is known in some localities as "red daisy." Both form dense patches and spread readily by seed which is easily wafted by the wind by reason of the cottony plumes.

Rhododendron viscosum Torr.

This beautiful azalea is abundant about Highland lake, Sullivan county. A single plant was found in which the flowers were as bright and rosy as those of *Rhododendron nudiflorum*. Nearly all the plants have white flowers.

Rhododendron maximum L.

This showy shrub grows in great profusion about Barryville and in other places in Sullivan county. The spots in the upper side of the corolla are described as yellow, reddish or orange, but in the Sullivan county plants they appear to me to be constantly green. It may be designated form *viridimaculatum*.

Lysimachia nummularia L.

Near Brewerton, Onondaga county, the moneywort has become so well established that it forms extensive carpets over the ground and extends for a considerable distance in the damp woods that skirt the outlet of Oneida lake.

Lysimachia quadrifolia L.

At Highland lake a form occurs in which the petals are tipped or margined with orange. The leaves are commonly in whorls of five or six. I have labeled it variety *variegata*, though perhaps it should be considered a form, rather than a variety.

Lysimachia stricta Ait.

This loosestrife is very variable. In a small swale near Narrowsburg five forms or varieties of it were collected. The typical form has the leaves lanceolate, opposite and acute at both ends and a rather long and closely flowered raceme with minute subulate inconspicuous bracts. Two varieties have been designated; one, var. *producta*, which has a long loose raceme with conspicuous foliaceous bracts; the other, var. *angustifolia*, which has the leaves narrowly lanceolate or linear and only one or two lines broad, the raceme being rather few flowered.

In the locality mentioned, the typical form, the variety *producta*, a form near var. *angustifolia* and a ternately leaved form of the first two were found growing together and apparently under the same conditions. What should cause these variations?

The narrow leaved form differs from variety *angustifolia* in having the leaves two to three lines broad, instead of one or two lines, and the raceme with numerous flowers. It is therefore intermediate between variety *angustifolia* and the typical form. I call it-form *intermedia*.

Commonly the leaves in the typical form are two inches or more in length, but there is a form in which they are less than two inches long. In these short leaved forms the raceme and the pedicels are generally shorter than in the type and the leaves are somewhat blunt at the apex. This might be called form *brevifolia*. The form which bears bulblets in the axils of the leaves and which is generally without flowers might be designated as form *bulbifera*. All of these forms and varieties may have the stem either simple or branched. All of them except variety *angustifolia*, which is found in the Southern States, occur in our State.

The following synopsis will show at a glance the distinctive features here noticed.

| | |
|---|------------------------|
| Flowers in a loose raceme, bracts subulate, inconspicuous..... | 1 |
| Flowers in a loose raceme, bracts foliaceous, conspicuous..... | Var. <i>producta</i> |
| Flowers usually wanting, bulblets in the axils of the leaves..... | Form <i>bulbifera</i> |
| 1 Leaves lanceolate..... | 2 |
| 1 Leaves narrowly lanceolate or linear..... | 3 |
| 2 Leaves two inches or more in length. (L. <i>stricta</i>). Form <i>typica</i> | |
| 2 Leaves less than two inches in length..... | Form <i>brevifolia</i> |
| 3 Leaves one to two lines broad, raceme few flowered, Var. <i>angustifolia</i> | |
| 3 Leaves two to three lines broad, raceme many flowered..... | Form <i>intermedia</i> |

Steironema lanceolatum Gr.

Port Jervis. July. In the Flora of North America the leaves of this species are said to be "an inch or two long." In all the specimens that I have seen they are longer than this, averaging about three inches.

Campanula aparinoides Pursh.

Highland lake. A form with pale blue flowers.

Apocynum androsæmifolium L.

Narrowsburg. July. A form *pauciflora*, with flowers smaller and whiter than usual. I do not find this form mentioned in our botanies.

Apocynum cannabinum L.

The Indian hemp is very abundant along the Delaware river at Port Jervis and at Narrowsburg. It is often procumbent or spreading in its mode of growth.

Var. *hypericifolium* was collected at Narrowsburg.

Asclepias tuberosa L.

Port Jervis. The form with yellow flowers.

Mimulus moschatus Dougl.

This plant is native in the Pacific coast States and has probably been introduced here because of its musk-like odor. It was found in a bog near Locust Grove, Long Island, in 1886, by J. A. Bixby. In 1891 it was discovered in a swampy locality near Middle Grove, Saratoga county by Rev. J. H. Wibbe. It still exists in this station and is apparently permanently established. It was also reported to me as being well established in two other stations in Saratoga county; one on the farm of T. H. Fuller, two miles southwest of Middle Grove, and the other on the farm of Robert Morris near Greenfield Center.

Utricularia vulgaris L.

This bladder wort makes a luxuriant growth in Cayuga lake. Specimens were obtained there having scapes nearly two feet long and 12 to 16 flowered.

Blephilia hirsuta Benth.

Taberg. June. A form with white flowers.

Rumex Patientia L.

Pierrepont Manor and Middle Grove. A form of this species with leaves closely resembling those of the yellow dock, *R. crispus*, is becoming quite common. Its whitish root more dense panicles and the larger nearly grainless valves of the fruit easily distinguish it. I have not seen the form described in the Manual, and credited with root leaves two to three feet long.

Larix Americana Mx.

On the shore of Highland lake an interesting tree of this species was observed. All the cones on the tree had the edges

of the cone scales incurved in such a way as to give to each scale a globular shape and to expose to view the bracts of the cone. The cone itself presented an appearance which might be compared to a mulberry or blackberry with very large drupelets. Other trees standing near had cones on them of the usual form. There was no appearance of injury to the cones by insects nor by any other agencies. While this may not be a permanent variety, perhaps a mere sport only, for the sake of convenience I designate it as variety *incurva*.

Picea alba Lk.

The white spruce is much less frequent in the Adirondack region than the black spruce. I have observed it in Essex county only. It is a handsome tree though generally of small size, branching nearly or quite to the base, and consequently not of much value for timber. There is, however, a large tree on the northern slope of Raven hill, standing near the road between Elizabethtown and Wadhams Mills. It is about two feet in diameter at the base but its branches extend nearly to the ground. The resemblance between the white spruce and some forms of the black spruce is so close that it is not always easy for an unskilled person to separate them. The descriptions of these trees, as given in the Manual, indicate but a part of their distinctive features, and the characters there ascribed to the edges of the cone scales do not in all cases hold good. Having compared these trees at flowering time the following characters seem to me to be the most available ones for distinguishing them.

WHITE SPRUCE.

Young branchlets glabrous. Leaves six to eight lines long. Cones oblong or cylindrical, deciduous before next flowering time. Sterile aments pale, supported on slender whitish pedicels exerted from the basal cup of scales. Fertile aments eight to ten lines long. Young leaves visible at flowering time.

BLACK SPRUCE.

Young branchlets pubescent. Leaves four to seven lines long. Cones ovate or oblong, still on the tree at next flowering time. Sterile aments tinged with red, sessile in the basal cup of scales. Fertile aments five to six lines long. Young leaves not yet visible at flowering time.

These trees are in flower at the same time in the same locality. They were in bloom the past season in the vicinity of Elizabethtown the last week in May.

Microstylis monophyllos Lindl.

Up to this time, fruiting specimens only have represented this very rare and delicate little orchidaceous plant in the State Herbarium. Two flowering specimens were found in June near Taberg.

Clintonia borealis Raf.

Form *lateralis*. Like the typical form except in having a lateral umbel or two on the side of the scape. These lateral umbels consist of two to five flowers and are usually two or three inches apart. Commonly there is but one, which is one and a half to three inches below the terminal one. When there are two the lower one has fewer flowers than the upper, and this always has fewer than the terminal one. In one specimen there are seven terminal flowers and five in the lateral umbel below them.

I do not deem this a variety, but a mere form which grows intermingled with the typical form. I have observed it in several places in the Adirondack region, where it is not rare, and also near Cooperstown Junction. It seems singular that such an interesting form has not yet been noticed in any of our botanies. It was first recorded by me in the Fortieth Report, p. 73.

Juncus militaris Bigel.

Highland lake. July. The plants are plentiful along the shore of the lake, between Myers House and Sand beach. The descriptive character, "rather contracted panicle," given in the Manual, does not apply well to these plants, for they have the panicle large and loose. It is generally about four inches long and nearly as broad. In many of the plants the stem is rather abruptly bent about midway between the insertion of the long leaf and the panicle, or at the place of the large bract-like sheathing base of an abortive upper leaf. Probably this abrupt flexure has suggested the common name "bayonet rush," which is sometimes applied to the plant, and perhaps, also, the specific name "militaris." Nevertheless no notice is taken of this very noticeable character in the description given in the Manual.

***Typha angustifolia* L.**

Professor Dudley has described a variety of *Typha latifolia*, under the name *elongata*. In it both the leaves and spikes are elongated, the former being "2 to 3½ meters" long, the latter "often 30 centimeters."

A similar variety of *Typha angustifolia* is found along the shore of Cayuga lake, between the railroad bridge and the outlet. In it the fertile part of the spike is eight to ten inches long. It may be designated var. *longispicata*, though I suspect it is merely a luxuriant development of the common form.

***Pontederia cordata* L.**

Specimens of this plant were collected in Highland lake in which the fibrous roots had a beautiful purple color. Var. *angustifolia* Torr. occurs here; also in Stissing pond, Dutchess county.

***Potamogeton Nuttallii* Ch. & Sch.**

A form of this species was collected in the upper waters of the Oswegatchie river near Sternbergs, in which the stem branches freely, and the leaves are unusually narrow. It is here characterized as var. *ramosus*. Stem slender, branched; floating leaves with blades 1.5 to 2.5 in. long, 3 to 6 lines broad; submerged leaves 1 to 2 lines broad. The name *P. Pennsylvanicus* Cham. is applied to this species in the Manual. I have followed Dr. Morong in nomenclature.

***Potamogeton amplifolius* Tuckerm.**

This is one of our most common species. It occurs in all parts of the State, in still or flowing, shallow or deep, soft or hard, warm or cold water. In deep water it is destitute of floating leaves. In Thompson's lake it skirts the whole western and a part of the eastern shore in water four to six or eight feet deep, and is always destitute of floating leaves. The foliage generally has a rufous tint. It seems to avoid more shallow water. The same form occurs in Warner's lake and behaves the same way.

***Potamogeton lonchites* Tuckerm.**

Specimens were collected in and near the outlet of Seneca lake in which, though in flower, the floating leaves were wanting or

but little different in texture size and shape from the submerged leaves.

Potamogeton heterophyllus Schreb.

Specimens referable to form *longipedunculatus* Morong were collected near the outlet of Seneca lake.

Potamogeton lucens L.

This species occurs in Oneida and Cayuga lakes. The var. *Connecticutensis* Robbins was collected in Stissing pond near Pine Plains. This is the only station recorded for it in our State.

Potamogeton filiformis Pers.

Cedar lake, Herkimer county. July. This is *P. marinus* of the Manual. It is scarcely separable, in some of its forms, from *P. pectinatus* in the absence of fruit, and it has probably been often confused with that species.

Potamogeton pectinatus L.

A form of this species is abundant in Warners lake, Albany county, in which the peduncle is whitish and 8 to 12 inches long.

In the N. Y. State Flora nine species of *Potamogeton* are recorded. The number of species now known to belong to the State is twenty-seven, all of which, except *P. lateralis*, are represented in the Herbarium.

The following is a list of the names of the species, varieties and forms as given in the Monograph of Dr. Morong and in the Manual:

MORONG'S MONOGRAPH.

| Potamogeton natans L. | | Potamogeton lucens L. | |
|-----------------------|--|-----------------------|-----------------------------------|
| P. | Oakesianus Robbins. | | Var. Connecticutensis Robbins. |
| P. | Nuttallii C. & S. | | |
| P. | amplifolius Tuckerm. | P. | prælongus Wulf. |
| P. | pulcher Tuckerm. | P. | perfoliatus L. |
| P. | alpinus Balb. | | Var. Richardsonii Bennett. |
| P. | lonchites Tuckerm. | | |
| | Var. Noveboracensis Morong. | P. | confervoides Reichb. |
| P. | heterophyllus Schreb. | P. | crispus L. |
| | Form graminifolius (Fr.) Morong. | P. | zosteræfolius Schum. |
| | Form longipedunculatus (Merat) Morong. | P. | obtusifolius M. & K. |
| | Form maximus Morong. | P. | Hillii Morong. |
| P. | angustifolius B. & P. | P. | foliosus Raf. |
| | | | Var. Niagarensis (Tuckerm.) Gray. |
| | | P. | pusillus L. |

| | |
|---------------------------------|------------------------------|
| Potamogeton major (Fr.) Morong. | Potamogeton Spirillus Tuckm. |
| P. Vaseyi Robbins. | P. filiformis Pers. |
| P. lateralis Morong. | P. pectinatus L. |
| P. diversifolius Raf. | P. Robbinsii Oakes. |

GRAY'S MANUAL.

| | |
|--------------------------|----------------------------|
| Potamogeton natans L. | Potamogeton perfoliatus L. |
| P. Oakesianus Robbins. | Var. lanceolatus Robbins. |
| P. Pennsylvanicus Cham. | P. Tuckermani Robbins. |
| P. amplifolius Tuckm. | P. crispus L. |
| P. pulcher Tuckm. | P. zosteræfolius Schum. |
| P. rufescens Schrad. | P. obtusifolius M. & K. |
| P. fluitans Roth. | P. Hillii Morong. |
| | P. pauciflorus Pursh. |
| P. heterophyllus Schreb. | Var. Niagarensis Gray. |
| Var. graminifolius (Fr.) | P. pusillus L. |
| | P. mucronatus Schrad. |
| | P. Vaseyi Robbins. |
| P. Zizii M. & K. | P. lateralis Morong. |
| P. lucens L. | P. hybridus Mx. |
| Var. Connecticutensis. | P. Spirillus Tuckm. |
| Robbins. | P. marinus L. |
| P. praelongus Wulf. | P. pectinatus L. |
| | P. Robbinsii Oakes. |

Eriophorum lineatum B. & H.

Low moist ground near Middle Grove. July.

Carex trisperma Dewey.

A form with the leaves more narrow than usual was collected on the boggy shore of Highland lake.

Carex retroflexa Muhl.

In the Manual, this sedge is subjoined to *C. rosea* as a variety. It differs considerably from that species in its range as well as in its appearance and characters. I do not find it at all in the northern and northeastern counties of the State, but it is not rare in some of the southern and western counties. *C. rosea* is common everywhere except perhaps in the coldest mountain regions.

Carex rosea Schk. var. staminata n. var.

Culms very slender but erect or nearly so 12 to 20 inches high, much surpassing the very narrow leaves; spikes commonly 4, distant, each terminated by a conspicuous staminate part sub-

tended by 1 to 6 perigynia, or sometimes one or more wholly staminate, the lowest one either with or without an exceedingly slender setaceous bract; perigynia either horizontally spreading or conspicuously deflexed. Cooperstown Junction. June.

This plant seems to approach variety *Texensis* but it differs in its distant spikes, deflexed perigynia and conspicuous staminate flowers.

***Carex æstivalis* Curt.**

This rare sedge is plentiful on the high wooded hills near East Worcester. It grows both in the woods and in open places by the roadside.

***Carex retrocurva* Dew.**

This is *C. laxiculmis* Schw, in the Manual. It has a form *serotina*, in which the new growth of the season, after the usual fruiting time, sends up short culms and produces another crop of fruit. In this case the pedicels are rather short and erect and the spikes are few flowered. Taberg and Helderberg mountains.

***Carex debilis* Mx.**

A variety *interjecta* Bailey in litt. to C. L. Shear, was discovered by Mr. Shear near Alcove, Albany county, and has since been found by myself near Pierrepont Manor, Jefferson county. It fruits in June. It differs from the ordinary form in its shorter perigynia, which by being loosely arranged on the rachis often give a moniliform appearance to the fertile spikes. The staminate spike usually has 2 to 4 perigynia a short distance below its apex. Sometimes the fertile spikes are also conspicuously staminate at the apex, and occasionally one has a short branch at its base.

Var. *strictior* Bailey. A form of this variety, having culms 12 to 18 inches high and yellowish green foliage, occurs near East Worcester. June. The broad leaves overtop the culms and the spikes are noticeably erect.

***Carex Oederi* Ehrh.**

This sedge was found growing with *C. flava* on the shores of Thompson's lake, Albany county. The two were so markedly different in appearance that it is very unsatisfactory to me to make the former a variety of the latter, as is done by some botanists.

Carex Emmonsii *Dev.* var. *elliptica* *Boott.*

In the Eighteenth Report on the State Cabinet of Natural History, p. 155, the characters of this sedge are published. It is described as having the spikes crowded; the perigynia rather long ($1\frac{6}{10}$ — $\frac{8}{10}$ of a line long, $\frac{6}{10}$ broad), hirsute, nearly twice the length of the scale; achenium elliptical-triquetrous ($1\frac{1}{10}$ of a line long, $\frac{1}{2}$ a line broad), style deciduous at the base. New York, *Knieskern*.

The variety has a longer body to the perigynium and a longer achenium, and the pubescence is softer and longer, and the proportionate length of the perigynium to the squamæ gives a peculiar aspect to the spike. It has not been noticed by authors: *F. Boott.* Penn Yan; Rochester, *Dewey*.

This sedge has not to this day been properly recognized in the Manual.

Dr. E. C. Howe, who has made a special study of carices and to whom specimens of this plant were sent for examination, considers it a good species, and has sent the following description of it under the name

Carex Peckii *nov. sp.*

Stems 3 to 16 inches high, culm leaves 2 to 5, very short, narrow, radical leaves 3 to 10 inches long, about one line broad; staminate spike small, sometimes inconspicuous; fertile spikes 2 to 3, aggregated, the two uppermost 3 to 8-flowered, the lowest 2 to 6, bracteate; perigynia 1.5 to nearly 2 lines long, about half as wide, elliptical-triquetrous, prominently beaked, strongly hirsute, longer than the ovate acute or acutish-mucronate scarious margined scale, long and tapering at the base; scales centrally green, the sides tinged with brown or purplish-brown; achenia triquetrous-elliptical, strongly 3-ribbed, prominently stipitate, 1 line or more long.

Helderberg mountains, Albany county; Brownville, Jefferson county; Elizabethtown, Essex county. Also collected by the late Professor Dewey in Yates and Monroe counties, and elsewhere in New York by the late Dr. Knieskern.

The largest specimens were collected at Brownville, the smallest near Elizabethtown. The plants grow in thin woods or their borders or where they are partly shaded by trees. The specimens

were collected in June. Doctor Howe considers the species related to *Carex deflexa* rather than to *C. Emmonsii*. Both its peculiar appearance and its distinctive spikes and fruit lead me also to think it is a valid species.

***Carex Houghtonii* Torr.**

Near Elizabethtown. May. This rare species has been observed in several places by Prof. Burt and myself in Saratoga and Essex counties, but I am not aware of its occurrence elsewhere in the State. It is an early flowering species, and delights in light sandy soil, through which it extends its creeping rootstocks.

***Carex utriculata* Boott.**

A small form of this species is found in the Adirondack region. Its spikes are scarcely more than an inch long, being smaller even than those of variety *minor*.

***Setaria viridis* Bv.**

The form of this grass noticed in the Thirty-fourth Report, p. 56, still persists about Albany and in its streets and yards. The same or a similar form is said, by Dr. Vasey in his Monograph of the Grasses of the United States and Canada, p. 38, to occur in the South. It is easily distinguished from the ordinary form of the species, and appears to be very constant in its characters. I have labeled our specimens Var. *purpurascens*, and the grass has been published and essentially characterized under this name by Prof. Dudley in his Catalogue of Cayuga plants, p. 122. Its spike-like panicle is more slender than in the type, 2.5 to 3 inches long, about 6 lines broad, including the setæ, 2.5 to 3 lines exclusive of the setæ, the clusters toward the base separated and verticillate as in *S. verticillata*, the setæ tinged with purple. Its resemblance to *S. verticillata* is closer than to *S. viridis* but its setæ are barbed upwards.

***Festuca ovina* L.**

The sheep's fescue is rare with us. A small patch of it was observed on the banks of the Delaware river at Narrowsburg. July. The specimens have the tall culms of variety *duriuscula*, but the panicle is contracted and the leaves involute.

Bromus purgans L.

This was considered a distinct species by Linnæus and stands as such in the N. Y. Flora. But modern botanists have generally connected it with *B. ciliatus* as a variety. I could wish it might be restored to its original position, for as far as my observation goes it is easily distinguished from *B. ciliatus* by its smaller, differently colored, less drooping panicle, its fewer spikelets, its more hairy flowers and its different habitat. It likes shade and most often grows in rocky woods. I have not observed it in the Adirondack region where *B. ciliatus* is quite common.

Danthonia spicata Bv.

The panicle in this grass is contracted after flowering. It varies in length from less than an inch to two and a half inches. Two forms occur. In one the leaves and sheaths are glabrous except a tuft of hairs at the throat of the sheaths. In the other the leaves and lower sheaths are clothed with long soft hairs. To distinguish this form I designate it Var. *villosa*. Specimens of it were collected at Brownville and Taberg.

Coprinus micaceus Fr. var. granularis n. var.

Pileus sprinkled with whitish granules or furfuraceous scales. Fulton chain, Hamilton county. August.

Polyporus versicolor Fr. var. carneiporus n. var.

Pores dull flesh-color. Ithaca. Dudley.

Dædalea unicolor Fr. var. fumosa n. var.

Pores smoky-brown. Dead birch, *Betula lutea*. Ithaca. October. Dudley.

Solenia anomala Pers. var. orbicularis n. var.

Receptacles collected in orbicular groups and seated on a conspicuous, dense, persistent, tomentose, tawny subiculum. Dead branches of appletree. Alcove. March. Shear.

Tubercularia carpogena Pk.

This name is preoccupied and I substitute for it *Tubercularia decolorans*.

Gyromitra sphærospora (Pk.) Sacc.

Ithaca. *Dudley*. This species was discovered twenty years ago. A single specimen was received from Prof. Dudley, which is the first one I have seen since the original discovery. The species is evidently rare. I am not aware that any specimens except the New York ones are in existence.

Urocystis Waldsteiniae Pk.

Cooperstown Junction. June. Usually every leaf on the diseased plant is affected by the fungus. The attacked plants do not flower so far as observed. In some instances an old dead and dried leaf of the previous year showed the marks of the fungus, thus indicating that the fungus is perennial.

(E.)

LIST OF NEW YORK FUNGI REPRESENTED AT THE WORLD'S COLUMBIAN EXPOSITION AT CHICAGO, IN THE HORTICULTURAL BUILDING, SECTION S, COLUMN 33, SPACE 304.

Specimens from New York State Herbarium.

EXHIBITOR — CHAS. H. PECK, ALBANY, N. Y.

Edible Fungi.

- | | |
|--|---|
| 1 <i>Amanita cæsaræa Scop.</i> | 10 <i>Clitocybe nebularis Batsch.</i> |
| 2 A. <i>rubescens Fr.</i> | 11 C. <i>media Peck.</i> |
| 2a A. "Wartless form. | 12 C. <i>infundibuliformis Schæff.</i> |
| 3 <i>Amanitopsis vaginata (Bull.) Roz.</i> | 12a C. "Pressed specimens. |
| 3a A. "var. <i>livida (Pers.)</i> . | 13 C. <i>cyathiformis Fr.</i> |
| 3b A. "var. <i>fulva (Schæff.)</i> | 14 C. <i>laccata Scop.</i> |
| 3c A. "var. <i>nivalis (Grev.)</i> | 14a C. "Pale irregular form. |
| 4 <i>Lepiota procera Scop.</i> | 14b C. "var. <i>amethystina (Bolt.)</i> |
| 5 L. <i>naucinoides Peck.</i> | 14c C. "var. <i>pallidifolia Peck.</i> |
| 6 <i>Armillaria mellea Vahl.</i> | 14d C. "var. <i>striatula Peck.</i> |
| 6a A. "clustered specimens. | 15 <i>Pleurotus ulmarius Bull.</i> |
| 6b A. "var. <i>bulbosa Peck.</i> | 15a P. "Pressed specimens. |
| 6c A. "var. <i>albida Peck.</i> | 16 P. <i>ostreatus (Jacq.) Fr.</i> |
| 6d A. "var. <i>glabra Gill.</i> | 16a P. "Large tuft. |
| 6e Abortive mushroom. | 17 P. <i>sapidus Kalchb.</i> |
| 7 <i>Tricholoma transmutans Peck.</i> | 18 <i>Hygrophorus virgineus (Wulf.) Fr.</i> |
| 8 T. <i>imbricatum Fr.</i> | 19 H. <i>pratensis (Pers.) Fr.</i> |
| 9 T. <i>personatum Fr.</i> | 20 H. <i>miniatus Fr.</i> |

- 21 *Lactarius deliciosus* (L.) Fr.
 22 L. *volemus* Fr.
 23 L. *subdulcis* (Bull.) Fr.
 24 *Russula virescens* (Schæff.) Fr.
 25 *Cantharellus cibarius* Fr.
 26 *Marasmius oreades* Fr.
 27 *Cortinarius collinitus* (Pers.) Fr.
 28 C. *violaceus* (L.) Fr.
 29 C. *armillatus* (A. & S.) Fr.
 29a C. "Pressed specimens.
 30 C. *cinnamomeus* (L.) Fr.
 30a C. "var. *semisanguineus* Fr.
 148 *Paxillus involutus* (Batsch) Fr.
 31 *Agaricus arven-is* Schæff.
 32 A. *silvicola* Vitt.
 33 A. *campester* L.
 33a A. "Cultivated form.
 34 A. *placomyces* Peck.
 35 *Coprinus comatus* Fr.
 36 C. *atramentarius* (Bull.) Fr.
 36a C. "var. *silvicola* Peck.
 37 C. *micaceus* (Bull.) Fr.
 37a C. "var. *conicus* Peck.
 38 *Boletus scaber* Fr.
 38a B. "var. *niveus* Fr.
 39 B. *subluteus* Peck.
 40 B. *subtomentosus* L.
 41 *Boletus affinis* Peck.
 42 B. *castaneus* Bull.
 43 *Polyporus sulphureus* (Bull.) Fr.
 43a P. "thicker form.
 44 *Hydnum repandum* L.
 45 H. *rufescens* Pers.
 46 H. *coralloides* Scop.
 47 *Fistulina hepatica* Fr.
 48 *Craterellus cornucopioides* (L.) Pers.
 49 *Clavaria botrytes* Pers.
 50 C. *flava* Schæff.
 51 C. *cristata* Pers.
 51a C. "Large form.
 51b C. "Dense form.
 52 *Lycoperdon cyathiforme* Bosc.
 53 *Gyromitra esculenta* (Pers.) Fr.
 54 *Morchella esculenta* (L.) Pers.
 55 M. *conica* Pers.
 56 M. *angusticeps* Peck.
 56a M. "Small form.
 57 M. *deliciosa* Fr.
 58 M. *semilibera* DC.
 59 *Helvella crispa* (Scop.) Fr.
 59a H. "Small form.
 60 *Mitrlula vitellina* (Bres.) Sacc.
 60a M. "var. *irregularis* Peck.

Fungi Growing on and Injurious to Wood.

- 61 *Panus stipticus* (Bull.) Fr.
 62 P. *operculatus* B. & C.
 63 *Lenzites betulina* (L.) Fr.
 64 L. *vialis* Peck.
 65 L. *sepiaria* Fr.
 65a L. "var. *porosa* Fr.
 66 *Schizophyllum commune* Fr.
 67 *Polyporus elegans* (Bull.) Fr.
 68 P. *osseus* Kalchb.
 69 P. *chioneus* Fr.
 70 P. *guttulatus* Peck.
 71 P. *undosus* Peck.
 71a P. "Resupinate form.
 72 P. *crispellus* Peck.
 73 P. *fumosus* (Pers.) Fr.
 74 P. *adustus* (Willd.) Fr.
 74a P. "var. *carpineus* (Schw.)
 75 P. *Weinmanni* Fr.
 76 P. *borealis* (Wallr.) Fr.
 77 P. *pubescens* (Schum) Fr.
 78 *Polyporus cuticularis* (Bull.) Fr.
 79 P. *nidulans* Fr.
 80 P. *gilvus* Schw.
 81 P. *glomeratus* Peck.
 82 P. *resinosus* (Schräd.) Fr.
 83 P. *betulinus* Fr.
 83a P. "Spotted specimens.
 83b P. "Young and old plants.
 83c P. "Brown pubescent form.
 84 P. *volvatus* Peck.
 85 P. *lucidus* (Leys.) Fr.
 86 P. *pinicola* Fr.
 86a P. "Older plants.
 86b P. "Pale margined specimens.
 86c P. "Various forms.
 87 P. *applanatus* (Pers.) Wallr
 87a P. "Dusted by its spores.
 87b P. "Various forms.
 88 P. *fomentarius* (L.) Fr.

- 88a Polyporus fom. Older plants.
 88b P. "Elongated forms.
 88c P. "var. zonatus Peck.
 88d P. "Various forms.
 89 P. igniarius (L.) Fr.
 89a P. "Old plants.
 90 P. nigricans Fr.
 90a P. "Old plants.
 90b P. "var. applanatus Peck.
 90c P. "subresupinate forms.
 91 P. connatus Fr.
 91a P. "Resupinate form.
 92 P. carneus Nees.
 92a P. "var. subzonatus Peck.
 92b P. "Resupinate form.
 92c P. "Various forms.
 93 P. conchatus (Pers.) Fr.
 94 P. piceinus Peck.
 94a P. "Resupinate form.
 95 P. biformis Klotz.
 95a P. "Resupinate form.
 96 P. conchifer Schw.
 97 P. aureonitens Pat.
 98 P. hirsutus Fr.
 98a P. "var. albiporus Peck.
 98b P. "var. nigromarginatus (Schw.)
 99 P. zonatus Fr.
 100 P. versicolor Fr.
 100a P. "Dark-colored forms.
 100b P. "Pale-colored forms.
 100c P. "var. fumosiporus Peck.
 100d P. "Various forms.
 101 P. pergamenus Fr.
 101a P. "Effused mycelium.
 101b P. "var. pseudopergamenus (Thum.)
 101c P. "var. elongatus (Berk.)
 101d P. "Old plants.
 02 P. abietinus Fr.
 102a P. "Form zonatus.
 102b Polyporus abiet. var. irpiciformis Peck.
 102c P. "Resupinate form.
 103 Gloeoporus conchoides Mont.
 103a "Resupinate form.
 104 Poria subacida Peck.
 105 Trametes suaveolens (L.) Fr.
 106 T. cinnabarina (Jacq.) Fr.
 107 T. Trogii Berk.
 108 T. mollis Fr.
 108a T. "Resupinate form.
 109 T. sepium Berk.
 109a T. "From railroad ties.
 110 Dædalea quercina (L.) Pers.
 111 D. unicolor (Bull.) Fr.
 111a D. "Old plants.
 111b D. "Plane form.
 111c D. "Complicate form.
 111d D. "var. fumosipora Peck.
 112 D. confragosa Pers.
 112a D. "Brown specimens.
 112b D. "var. Cookei Peck.
 112c D. "var. rubescens Peck.
 112d D. "var. Klotzschii Peck.
 112e D. "Irregular forms.
 113 Merulius tremellosus Schrad.
 114 M. lacrimans (Jacq.) Fr.
 115 Irpex cinnamomeus Fr.
 116 Odontia lateritia B. & C.
 117 Stereum complicatum Fr.
 117a S. "var. laceratum Peck.
 145 S. bicolor (Pers.) Fr.
 145a S. "Old plants.
 146 S. versicolor (Sw.) Fr.
 147 S. sericeum (Schw.)
 118 Chlorosplenium æruginosum (Ed.) DeN.
 118a Wood stained by its Mycelium.
 119 Wood permeated by Mycelium.
 120 Bark overrun by Mycelium.

Fungi Injurious to Cultivated and Useful Plants.

- 121 Gloeosporium lagenarium (Pass.) S. & R.
 122 Plowrightia morbosa (Schw.) Sacc.
 122a P. "on wild red cherry.
 122b P. "on wild black cherry.
 122c P. "on beach plum.
 122d Plowrightia morbosa on cultivated plum.
 123 Monilia fructigena Pers.
 123a M. "on plums.
 123b M. "on pears.
 123c M. "on twigs and leaves of apricots.

| | | | |
|------|--|------|--|
| 124 | <i>Entomosporium maculatum</i> Lev. | 129 | <i>Cercospora Apii</i> Fres. |
| 124a | E. mac. on pear leaves and fruit. | 130 | C. beticola Sacc. |
| 125 | <i>Plasmopara viticola</i> (B. & C.) B. & DeT. | 131 | <i>Puccinia Malvacearum</i> Mont. |
| 125a | <i>Plasmopara</i> "on fruit of wild grape. | 132 | <i>Ustilago Maydis</i> (D. C.) Cd. |
| 125b | <i>Plasmopara</i> "on leaves of Niagara grape. | 132a | U. "on ears of Indian corn. |
| 126 | <i>Phytophthora infestans</i> (Mont.) DeBy. | 133 | U. Tritici (Pers.) Jensen. |
| 127 | <i>Peronospora parasitica</i> (Pers.) Tul. | 134 | U. Hordei (Pers.) K. & S. |
| 128 | <i>Cladosporium fulvum</i> Cke. | 135 | U. Avenae (Pers.) Jensen. |
| | | 136 | <i>Cryptospora Goeppertiana</i> Kuhn. |
| | | 137 | <i>Dimerosporium Collinsii</i> (Schw.) Thum. |
| | | 138 | <i>Hypoderma lineare</i> Peck. |

Fungi Injurious to Noxious Weeds and Animals.

| | | | |
|-----|-------------------------------------|------|---|
| 139 | <i>Empusa Muscæ</i> Cohn. | 143 | <i>Puccinia suaveolens</i> (Pers.) Rostr. |
| 140 | <i>Sporendonema myophilum</i> Sacc. | 143a | P. "Later form. |
| 141 | <i>Cystopus candidus</i> Lev. | 144 | <i>Ustilago Cesatii</i> Wald. |
| 142 | <i>Peronospora Linariæ</i> Fekl. | | |

Recapitulation.

| | Species. |
|--|-----------------|
| Edible fungi..... | 61 |
| Fungi growing on and injurious to wood..... | 63 |
| Fungi injurious to cultivated and useful plants..... | 18 |
| Fungi injurious to noxious weeds and animals..... | 6 |
| | <hr/> 148 <hr/> |

(F.)

PRELIMINARY LIST OF HYMENOMYCETOUS FUNGI INHABITING THE WOOD OR BARK OF THE TRUNKS OR BRANCHES OF OUR PRINCIPAL CONIFEROUS FOREST TREES.

TSUGA CANADENSIS, Carr.

Hemlock.

| | |
|---------------------------------|------------------------------------|
| <i>Armillaria mellea</i> Vahl. | <i>Pleurotus porrigens</i> Pers. |
| <i>Tricholoma decorosum</i> Pk. | P. striatulus Fr. |
| T. multipunctum Pk. | <i>Naucoria bellula</i> Pk. |
| <i>Clitocybe ectypoides</i> Pk. | N. geminella Pk. |
| <i>Collybia platyphylla</i> Fr. | <i>Paxillus atrotomentosus</i> Fr. |
| C. abundans Pk. | P. panuoides Fr. |
| C. rugosodisca Pk. | <i>Panus stypticus</i> Bull. |
| C. succosa Pk. | P. lacunosus Pk. |
| <i>Mycena Leaiana</i> Berk. | <i>Lenzites sepiaria</i> Fr. |
| M. epipterygia Scop. | L. betulinus Fr. |
| <i>Omphalia lilacifolia</i> Pk. | <i>Lentinus lepideus</i> Fr. |
| O. Campanella Batsch. | <i>Polyporus lucidus</i> Leys. |

Polyporus benzoinus Fr.
P. pinicola Fr.
P. epileucus Fr.
P. cæsius Fr.
P. undosus Pk.
P. crispellus Pk.
P. maculatus Pk.
P. Weinmanni Fr.
P. borealis Fr.
Polystictus abietinus Fr.
Poria vulgaris Fr.
P. subacida Pk.
P. Vaillantii Fr.
P. rhodella Fr.
Trametes cinnabarina Fr.

Trametes sepium Berk.
Merulius himantoides Fr.
M. subaurantiacus Pk.
Solenia villosa Fr.
Hydnum farinaceum Fr.
Mucronella calva Fr.
Tremellodon gelatinosum Pers.
Stereum sanguinolentum A. & S.
S. rugosum Fr.
S. radiatum Pk.
Hymenochæte tenuis Pk.
Corticium amorphum Pers.
Dacrymyces deliquescens Duby.
Ditiola radicata Fr.
Clavaria abietina Fr.

PICEA NIGRA Lk.

Spruce.

Clitocybe sulphurea Pk.
Mycena purpureofusca Pk.
M. hiemalis Osb.
Omphalia Austini Pk.
Lenzites sepiaria Fr.
L. heteromorpha Fr.
Lentinus lepideus Fr.
Polyporus Schweinitzii Fr.
P. picipes Fr.
P. aurantiacus Pk.
P. volvatus Pk.
P. dualis Pk.
P. carneus Fr.
P. pinicola Fr.
P. borealis Fr.
Polystictus piceinus Pk.
P. versicolor Fr.
P. balsameus Pk.
P. abietinus Fr.
P. variiformis Pk.
Poria subacida Pk.

Poria vaporaria Fr.
P. vulgaris Fr.
P. odora Pk.
P. mutans Pk.
P. marginella Pk.
Trametes serpens Fr.
Merulius Ravenelii B. & C.
M. molluscus Fr.
Hydnum farinaceum Fr.
Caldesiella ferruginosa Sacc.
Irpex fuscoviolaceus Fr.
Odontia fusca C. & E.
Stereum rugosum Fr.
S. radiatum Pk.
S. ambiguum Pk.
Hymenochæte abnormis Pk.
Corticium sulphureum Fr.
C. subincarnatum Pk.
C. subaurantiacum Pk.
C. cremoricolor B. & C.
Hirneola auricula-Judæ Fr.

ABIES BALSAMEA Mill.

Balsam fir.

Clitocybe sulphurea Pk.
Pleurotus mitis Pers.
Lentinus strigosus Schw.
Polyporus pinicola Fr.
P. volvatus Pk.
Polystictus abietinus Fr.

Polystictus balsameus Pk.
Merulius aureus Fr.
Stereum balsameum Pk.
Corticium sulphureum Fr.
C. amorphum Pers.
Hirneola auricula-Judæ Fr.

PINUS STROBUS L.

White pine.

Tricholoma flavescens *Pk.*
 T. rutilans *Schæff.*
 Collybia rubescentifolia *Pk.*
 Pleurotus striatulus *Fr.*
 Lenzites sepiaria *Fr.*
 L. vialis *Pk.*
 Lentinus lepideus *Fr.*
 Paxillus atrotomentosus *Fr.*
 P. panuoides *Fr.*

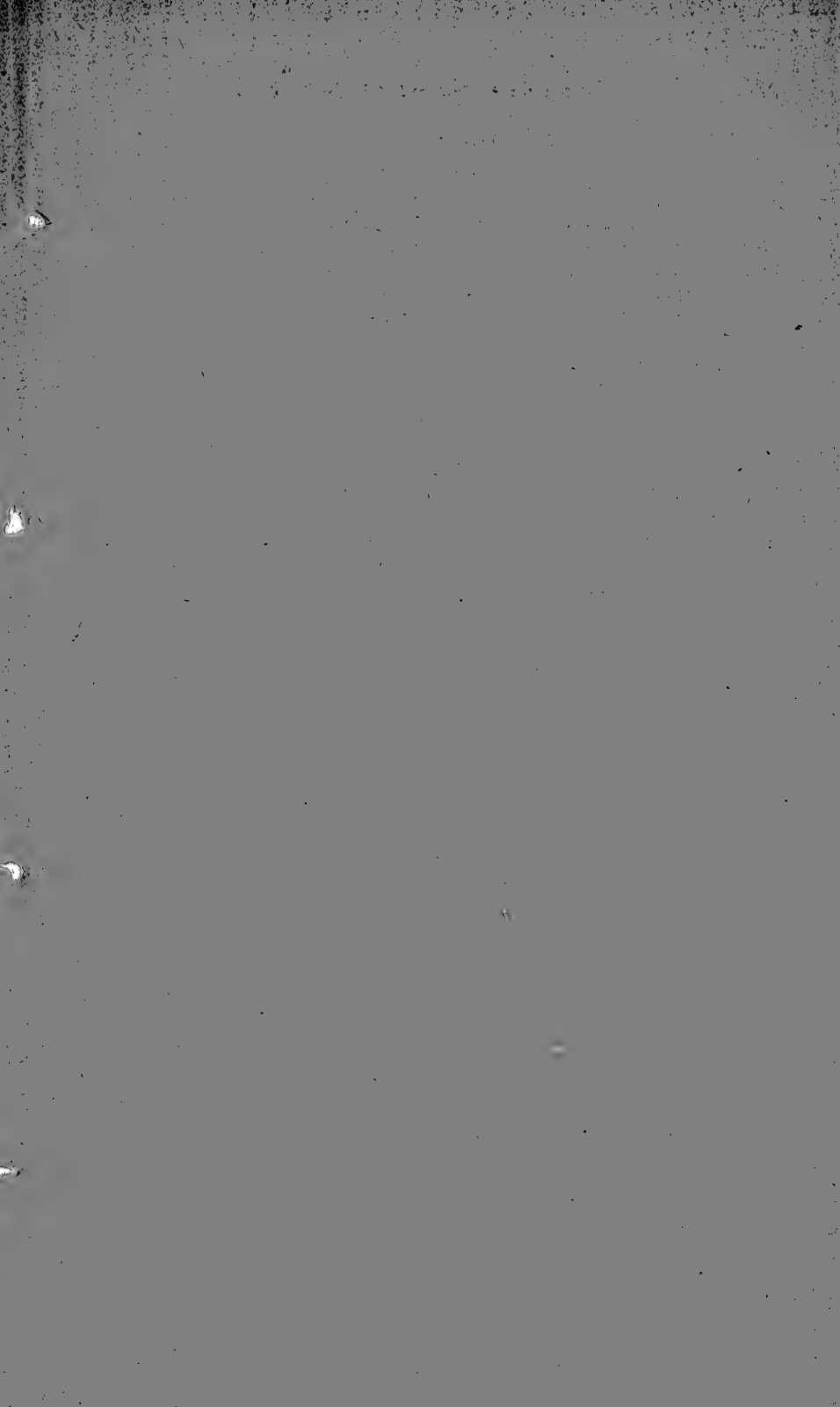
Boletus hemichrysus *B. & C.*
 Polyporus osseus *Kalchb.*
 P. pinicola *Fr.*
 Poria pinea *Pk.*
 Merulius lacrimans *Fr.*
 Tremella pinicola *Pk.*
 T. foliacea *Pers.*
 Dacrymyces deliquescens *Duby.*

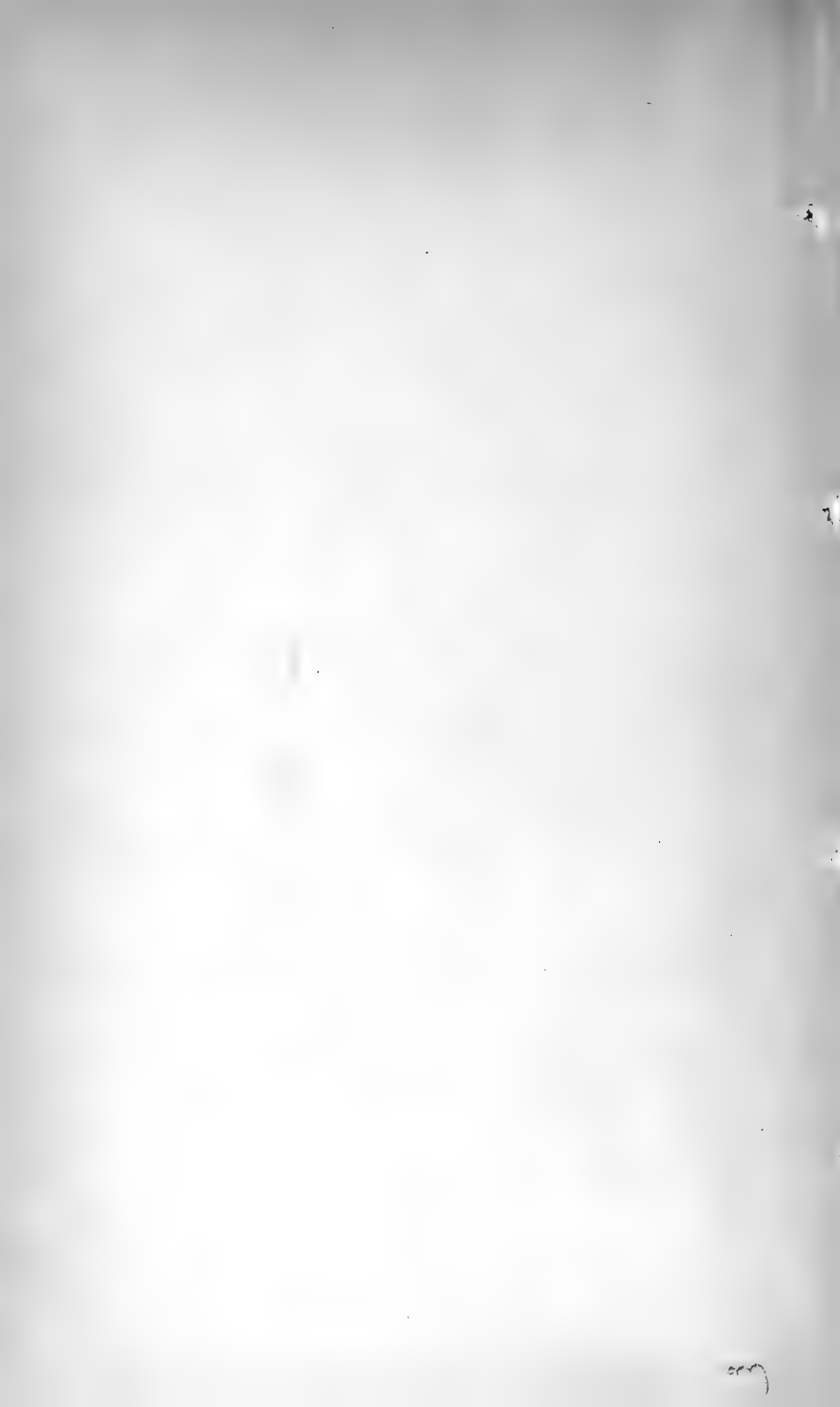
PINUS RIGIDA Mill.

Pitch pine.

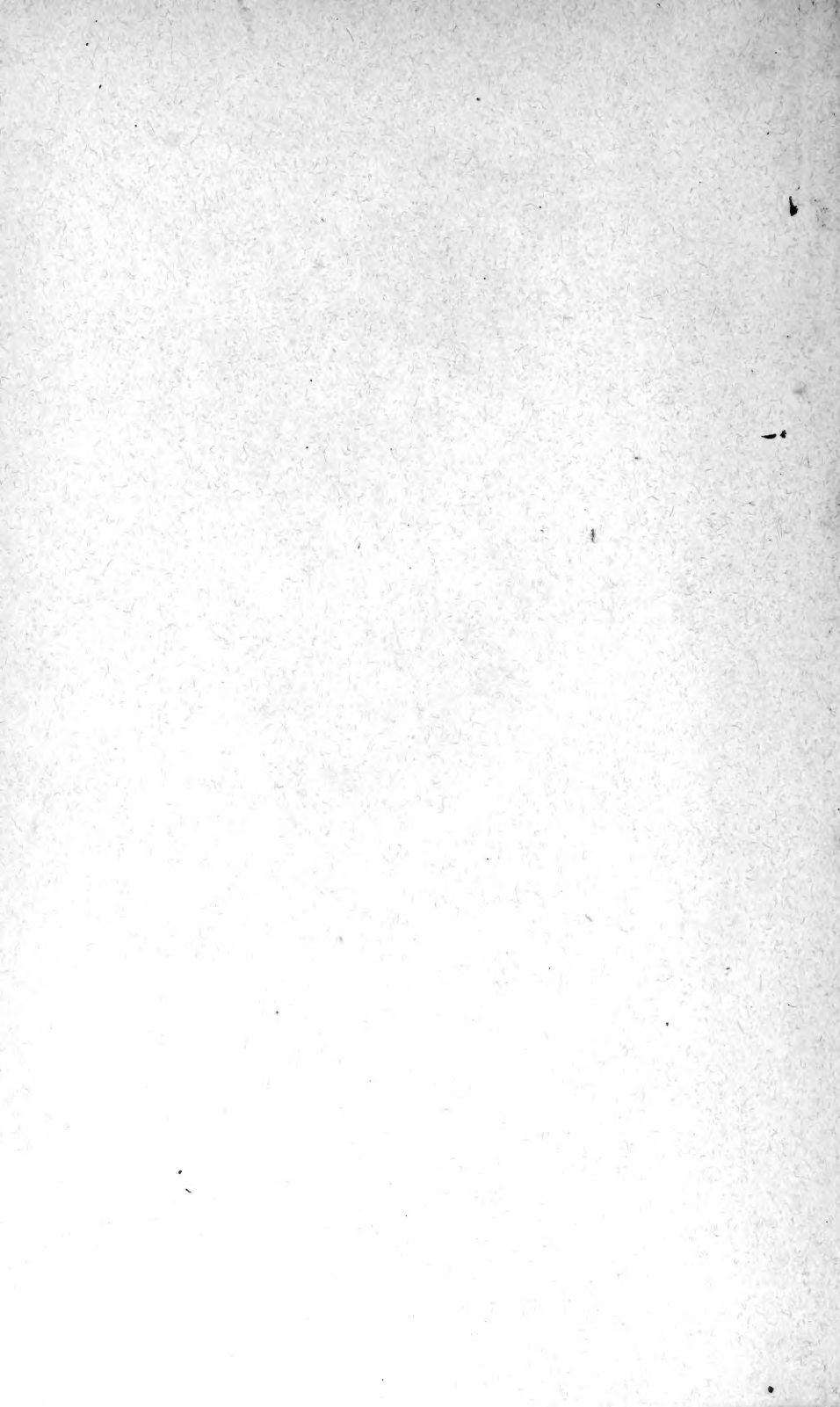
Pluteus umbrosus *Pers.*
 Lenzites sepiaria *Fr.*
 Polyporus circinatus *Fr.*
 P. volvatus *Pk.*
 P. Weinmanni *Fr.*

Polystictus abietinus *Fr.*
 Poria vaporaria *Fr.*
 Trametes Pini *Fr.*
 Stereum sanguinolentum *Fr.*









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